

SOCY 602: Regression Analysis

Mondays and Wednesdays, 10:50am-12:10pm, ASY 3207
Fall 2019

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1. Course Description

1.1 Overview

The main body of this course focuses on “intermediate” level single-equation regression techniques. Though we will begin with a review of bivariate regression, this course presumes that students have mastered basic statistics and regression. We will cover some basic material in statistics. It can be applied to a variety of sociological research problems and fosters an understanding of the theory of scientific methods. Further, as professional sociologists, most of you will be required to direct and produce research, such as a thesis, professional reports or referred research articles. To the end, you will learn regression analysis by application.

1.2 Objectives

After successfully completing this course you will be able to:

- Develop some quantitative research skills and get a general understanding of what is regression analysis, how to use it, how to determine if you have a good model, and conduct regression diagnostics.
- Be well-prepared for more advanced statistical courses, such as categorical data analysis, multilevel models, and causal analysis.
- Refine your computing skills using a statistical software application to solve statistical problems (Stata will be supported in this class but you can use other software like R or SAS if you can support yourself).

1.3 Course Communication

To contact me, please use my zylin@umd.edu email address. Please always put SOCY602 in the subject line. You can expect a response within 24 hours. And please do NOT use ELMS messages – your message may get lost. It is essential that we all conduct ourselves as professionals, so please visit ter.ps/email for some friendly guidance on writing emails.

1.4 Texts and Materials

Textbook: There will be two textbooks for this course. The books are available at the Campus Bookstore.

- Gorden, Rachel A. 2010. *Regression Analysis for the Social Sciences*. New York: Routledge.
- Alan C Acock. 2016. *A Gentle Introduction to Stata, 5th Edition*.

Other materials: I have compiled a list of articles that complement or supplement the textbook. All other course materials will be uploaded and provided through the course website in ELMS (<https://www.elms.umd.edu/>).

2. Course Policies

2.1 Attendance policy

Your active participation in the course is not only crucial for your own learning but for that of your peers. I will not take attendance in lecture, but I will be mindful of classroom participation, i.e., which students try to engage in a positive manner with the material, and it will impact your final grade.

2.2 Late Work and Grading

All assignments should be completed by the due. If you do not complete assignments by 11:59 p.m. of the assigned date, you will only receive up to HALF CREDIT. Late assignments will be graded normally according to the requirements, but the the scores will be cut in half. Make-ups and extensions are not granted unless you provide documented proof or pre-approved absence defined by the University Policy (<http://ugst.umd.edu/courserelatedpolicies.html>). However, late exams will not be accepted except in the case of documented emergency and should get my approval at least two weeks in advance. There is no extra credit and the grade will not be negotiable. If you experience difficulties, I strongly encourage you to contact me as soon as possible so that I can help you get on track in the early stages of the course.

2.3 Academic Dishonesty

Any of the following acts are considered academic dishonesty and are subject to serious punishment: cheating, fabrication, facilitating academic dishonesty, and plagiarism. In this class, there will be zero tolerance toward any types of the academic dishonesties and the minimum penalty will be a grade of zero for the assignment; more excessive misconduct will result in a grade of "F" for the course and the filing of charges for academic misconduct. Plagiarism is the borrowing of information, wording, organization, or ideas without acknowledging the source. You must note any sources you use in writing and assignments for this course. When you repeat exact language (even a few words!) you must put the material in quotation marks, followed by a reference to the source. For more information, see the University Policy on Academic Dishonesty (<https://www.studentconduct.umd.edu/academic-dishonesty>).

3. Course Assessments

Grades are not given, but earned. Your grade is determined by your performance on the learning assessments in the course and is assigned individually (not curved). If earning a particular grade is important to you, please speak with me at the beginning of the course so that I can offer some helpful suggestions for achieving your goal.

3.1 Homework (30%): There will be SIX homework assignments throughout the semester. These assignments are designed to help prepare you for the exam and final paper and should reflect your work and only your work. You can discuss with other peers about assignments but you should complete them by yourself. You should use the homework assignments as a way to solidify your knowledge of the material and to help clarify the areas in which you may need help.

3.2 Mid-Term Exam (30%). There is one mid-term exam. The exam is designed to evaluate students' understanding of the materials. Topics covered in the lectures and readings will both be included in the exam. Review sessions for the exam will be held to help students prepare for the exams. Please ensure you bring your UMD Student ID to the exams and place it visibly on the table.

3.3 Final Project (40%). Your long-term assignment in this course is to develop an empirical research paper that contains a statistical analysis tied to some theoretical foundation. Prior to completing your paper, there will be SIX tasks related to your project throughout the semester (details shown in the course schedule below). You will use the General Social Survey (GSS) dataset to complete your homework assignments and are also recommended to use it for your final paper. You may select your own topic, something of particular interest to you, but you must be able to find relevant data if you choose not to use the GSS dataset.

3.4 Grading

Final Grade Cutoffs								
+	97.00%	+	87.00%	+	77.00%	+	67.00%	
A	94.00%	B	84.00%	C	74.00%	D	64.00%	F <60.0%
-	90.00%	-	80.00%	-	70.00%	-	60.00%	

4. Course Schedule

Week 1

August 26 Welcome and Course Overview

August 28 Introduction to Regression Analysis

Week 2

September 2 Labor Day (no class)

September 4 Bivariate Regression (I)

Final Project Task 1: Choose Your Research Question (due 9/8)

Week 3

September 9 Bivariate Regression (II)

September 11 Stata Workshop for Bivariate Regression

Homework Assignment 1: Bivariate Regression (due 9/15)

Week 4

September 16 Matrix Algebra: Introduction/Review (I)

September 18 Matrix Algebra: Introduction/Review (II)

Final Project Task 2: Explore Your Dataset (due September 22)

Week 5

September 23 Multiple Regression (I)

September 25 Multiple Regression (II)

Homework Assignment 2: Multiple Regression I (due 9/29)

Week 6

September 30 Dummy Variables

October 2 Interactions

Final Project Task 3: Find Literature about Your Research Topic (due 10/6)

Week 7

October 7 Stata Workshop for Multiple Regression (I)

October 9 Stata Workshop for Multiple Regression (II)

Mid-Term Exam Review

Homework Assignment 3: Multiple Regression II (due 10/13)

Week 8

October 14 Mid-Term Exam

October 16 Nonlinear Relationships

Week 9

October 21 Indirect Effects

October 23 Omitted Variable Bias

Final Project Task 4: Preliminary Analysis Report (due 10/27)

Week 10

October 28 Missing Data

October 30 Stata Workshop

Homework Assignment 4: Multiple Regression III (due 11/3)

Week 11

November 4 Diagnostics (I)

November 6 Diagnostics (II)

Final Project Task 5: Describe Your Sample and Methods (due 11/10)

Week 12

November 11 Stata Workshop for Diagnostics (I)

November 13 Stata Workshop for Diagnostics (II)

Homework Assignment 5: Diagnostics (due 11/17)

Week 13

November 18 Visualization of Regression Analysis (I)

November 20 Visualization of Regression Analysis (II)

Final Project Task 6: Describe Your Findings (due 11/24)

Week 14

November 25 Q&A Session (No Lecture)

November 27 Thanksgiving Break (No Class)

Homework Assignment 6: Visualization (due 12/1)

Week 15

December 2 Final Project Presentations (I)

December 4 Final Project Presentations (II)

Final Research Paper (due 12/8)

5. Others

5.1 Get Some Help

Taking personal responsibility for your own learning means acknowledging when your performance does not match your goals and doing something about it. I hope you will come talk to me so that I can help you find the right approach to success in this course, and I encourage you to visit tutoring.umd.edu to learn more about the wide range of campus resources available to you. In particular, everyone can use some help sharpen their communication skills (and improving their grade) by visiting ter.ps/writing and schedule an appointment with the campus Writing Center. Finally, if you just need someone to talk to, visit counseling.umd.edu or [one of the many other resources on campus](#).

5.2 Technical Support

Technology will never work 100% of the time. Please understand that I am not able to diagnose and fix technical difficulties with campus tools or your personal computer. If you have any problems with course resources please consult with the IT Helpdesk directly (helpdesk.umd.edu). If the problem is limiting access to a course resource, try using a campus computer in the meantime – visit the UMD library website (<https://www.lib.umd.edu>) to find available computers near you.

5.3 Course Evaluations

As members of our learning community, your personal reflection and feedback is crucial to success of this course and our conversations. As instructors, it is particularly valuable for us to collect formative feedback from our students since it can help inform our own teaching choices and strategies. To do this, there will be several opportunities throughout the course to reflect on our class and your learning experience. I also encourage you to meet with me in person (or through video) and feel free to email me if you have any questions, concerns, and suggestions for me as well as for this course.