

SYLLABUS

PUBLIC POLICY 608 APPLIED MULTIVARIATE REGRESSION SPRING 2021

INSTRUCTOR

Yusuke Kuwayama

Email: kuwayama@umbc.edu

Pronouns: he/him/his

OFFICE HOURS

Hours: Mondays 2 – 3 pm ET, Tuesdays noon – 1 pm ET, or by appointment

Zoom Meeting ID: 945 503 3539

LEARNING OBJECTIVE

This course provides an introduction to the practical application of widely used basic multivariate regression techniques. Methods covered include multiple linear regression, time series and panel data analysis, regression discontinuity designs, differences-in-differences, and limited dependent variable models. Students will gain experience in the use of these techniques through hands-on exercises and the preparation of an original regression analysis of real-world data in an area of interest selected by the student.

CLASS FORMAT

The instruction mode for this class is fully online in Spring 2021. The class will meet in live (synchronous) sessions via [Zoom](#) on Wednesdays from 7:10 pm to 9:40 pm. The Zoom Meeting ID is: 945 503 3539. These sessions will involve a mix of lecture, discussion, small group work, and short breaks. In addition, students will be expected to access one or two short recorded (asynchronous) lecture sessions each week which will be posted on Blackboard on the Monday preceding each live class session.

REQUIRED COURSE MATERIALS

1. Wooldridge, Jeffrey M. (2020). *Introductory Econometrics: A Modern Approach*. Boston, MA: Cengage. Seventh Edition.
2. Angrist, Joshua D., and Jorn-Steffen Pischke. (2015). *Mastering 'Metrics: The Path from Cause to Effect*. Princeton, NJ: Princeton University Press.
3. Stata/MP 16: Students are expected to have Stata installed on a computer and should have access this computer during class. Free download for UMBC graduate students at: <https://wiki.umbc.edu/display/faq/Software>.

OPTIONAL COURSE MATERIALS

1. Kennedy, Peter. (2008). *A Guide to Econometrics*. Malden, MA: Blackwell. Sixth Edition.
2. Acock, Alan C. (2014). *A Gentle Introduction to Stata*. College Station, TX: Stata Press. Sixth Edition.

COURSE REQUIREMENTS

1. **Problem sets (8 x 5 points each; lowest score will be dropped):** Problem sets will guide students through statistical analysis exercises. Students are encouraged to work collaboratively but each student must

submit their own original assignment. Completed problem sets are submitted through Blackboard and are always due at the beginning of class. No late problem sets are accepted but a missed problem set can count towards your lowest score dropped.

2. **Take-home midterm exam (25 points):** The exam will test mastery of theory and execution of multivariate regression techniques.
3. **Take-home final project (35 points):** An original regression analysis of real-world data in an area of interest selected by the student to demonstrate mastery of course concepts and ability to communicate results in writing.

TECHNOLOGY: ACCESS, REQUIREMENTS, RESOURCES, SUPPORT

To help ensure that UMBC students are equipped for academic success, the Division of Information Technology (DoIT) provides a wealth of resources and support, including tips for getting online and minimum specifications to consider when purchasing a computer (doit.umbc.edu/students). UMBC does require all students to be technologically self-sufficient, which entails having a reliable personal computer (preferably a laptop with webcam) and Internet access. Since UMBC requires all students to have a computer and Internet access, financial aid may be used to meet this requirement. To learn more, students should contact their financial aid counselor at financialaid.umbc.edu/contact.

ACADEMIC INTEGRITY IN THE ONLINE INSTRUCTION ENVIRONMENT

Academic integrity is an important value at UMBC. By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community in which everyone's academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they are wrong. Academic misconduct could result in disciplinary action that may include, but is not limited to, suspension or dismissal. These principles and policies apply in both face-to-face and online classes. Resources for students about academic integrity at UMBC are available at <https://academicconduct.umbc.edu/resources-for-students/>.

ACCESSIBILITY AND DISABILITY ACCOMMODATIONS, GUIDANCE, AND RESOURCES

Accommodations for students with disabilities are provided for all students with a qualified disability under the Americans with Disabilities Act (ADA & ADAAA) and Section 504 of the Rehabilitation Act who request and are eligible for accommodations. The Office of Student Disability Services (SDS) is the UMBC department designated to coordinate accommodations that would create equal access for students when barriers to participation exist in University courses, programs, or activities.

If you have a documented disability and need to request academic accommodations in your courses, please refer to the SDS website at sds.umbc.edu for registration information and office procedures.

SDS email: disAbility@umbc.edu

SDS phone: (410) 455-2459

If you will be using SDS approved accommodations in this class, please contact me (instructor) to discuss implementation of the accommodations. During remote instruction requirements due to COVID, communication and flexibility will be essential for success.

SEXUAL ASSAULT, SEXUAL HARASSMENT, AND GENDER BASED VIOLENCE AND DISCRIMINATION

UMBC's [Policy on Sexual Misconduct, Sexual Harassment and Gender Discrimination](#) and Federal Title IX law prohibit discrimination and harassment on the basis of sex in University programs and activities. Any student who is impacted by sexual harassment, sexual assault, domestic violence, dating violence, stalking, sexual

exploitation, gender discrimination, pregnancy discrimination, gender-based harassment or retaliation should contact the University's Title IX Coordinator to make a report and/or access support and resources:

Mikhel A. Kushner, Title IX Coordinator (she/her/hers)
410-455-1250 (direct line), kushner@umbc.edu

You can access support and resources even if you do not want to take any further action. You will not be forced to file a formal complaint or police report. Please be aware that the University may take action on its own if essential to protect the safety of the community.

If you are interested in or thinking about making a report, please see the Online Reporting Form. Please note that, while University options to respond may be limited, there is an anonymous reporting option via the online form and every effort will be made to address concerns reported anonymously.

COURSE SCHEDULE, READINGS, & DUE DATES

Week #	Date	Topic	Readings	Due
1	January 27	Introduction	W: Chapter 1	
2	February 3	Simple regression	W: Chapter 2	<i>Problem Set #1</i>
3	February 10	Multiple regression I	W: Chapter 3	<i>Problem Set #2</i>
4	February 17	Multiple regression II	W: Chapter 4	
5	February 24	Multiple regression III	W: Chapters 5 – 6 A & P: Chapter 2	<i>Problem Set #3</i>
6	March 3	Dummy variables	W: Chapter 7	
7	March 10	Heteroskedasticity; Specification and data issues	W: Chapters 8 – 9	
8	March 17	Midterm exam prep		<i>Problem Set #4</i>
9	March 24	Time series data I	W: Chapters 10 – 11	
10	March 31	Time series data II	W: Chapter 12	
11	April 7	Panel data I	W: Chapter 13	<i>Problem Set #5</i>
12	April 14	Panel data II	W: Chapter 14	
13	April 21	Instrumental variables and two stage least squares	W: Chapter 15 A & P: Chapter 3	<i>Problem Set #6</i>
14	April 28	Regression discontinuity designs; Differences-in- differences	A & P: Chapters 4 – 5	<i>Problem Set #7</i>
15	May 5	Limited dependent variable models	W: Chapter 17	<i>Problem Set #8</i>
16	May 12	Workshop for final projects		