

## ECON412-PUBP514: EMPIRICAL MICROECONOMICS

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Professor. Nara Sritharan (you can call me Professor S)

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Class meetings: T, TH 9:30-10.50. Chancellors Hall 217.

Student hours: T, TH 11-12, Chancellors Hall 441, and by appointment (please use

<https://calendly.com/nsritharan/econ412-pub514> to schedule an appointment).



### COURSE OBJECTIVES

Did you know that Charles Darwin went for a walk every morning and afternoon for 45 mins? He was really smart. Does it mean that if you walk 45 mins twice a day you can be the new Charles Darwin? Correlation does not necessarily lead to causation, right?

The aim of this course is to empower students with a set of conceptual and econometric skills to estimate the causal impact of one factor on some outcome of interest. Examples explore the causal effect of policies, laws, programs and “natural experiments.” We will go beyond estimating causal effects to analyze the channels through which the causal impact was likely achieved, using microeconomic understanding of incentives and institutions.

The course will introduce students to a variety of econometric techniques in impact evaluation and a set of reasoning skills intended to help them become both a consumer and producer of applied empirical research. Students will learn to critically analyze evaluation research and to gauge how convincing the research is in identifying a causal impact.

At the end of the course the student will be able to:

- Explain and apply a variety of quantitative methods for estimating impact, including randomized controlled trials and quasi-experimental designs, such as ‘natural experiments’, propensity score matching, difference-in-difference and synthetic control designs.

- Critically analyze impact evaluation research in the social sciences and gauge the validity of causal estimates.
- Develop the ability to run regressions successfully and be able to replicate results from other authors through coding skills in Stata (or R if you're already more comfortable with that)
- Develop skills to communicate journal articles and economic jargon to a popular audiences/policy makers through various media tools.

### TEXTS AND READING MATERIALS

The texts for the class comprise two books and a variety of journal articles and papers.

The **required** textbooks for the class are:

1. Gerber, Alan S., and Donald P. Green. 2012. *Field Experiments: Design, Analysis, and Interpretation*. New York: W.W. Norton. (Listed as **FEDAI** in the reading list below).
2. Angrist, Joshua D., and Stephen Pischke. 2009. *Mostly Harmless Econometrics: An Empiricists' Companion*. Princeton, NJ: Princeton Press. (Listed as **MHE** in the reading list below)

Journal articles and other chapters listed can be found on Blackboard.

### ASSIGNMENTS

#### **Homework Assignments – for everyone**

There will be 3 homework assignments in the first half of the course that will provide you with an opportunity to learn about and implement experimental designs. You will submit these individually but you are allowed to work with others and mention while mentioning who you worked with in the submission. Please submit these assignments via Blackboard.

#### **Midterm – for everyone (March 21<sup>st</sup>)**

Pick a journal article from the suggested readings and translate it into a piece for popular media of your choice – Twitter thread, TikTok video, blogpost, or OpEd. You will have to emphasize how this (the research article you pick) affects the real world and policies.

#### **Final Project Assignment – for everyone (May 12th)**

- **Econ Students Project Assignment**

You will complete this assignment individually or in groups of two. The tasks will largely be completed over the second half of the semester. You will have the opportunity to choose your own research question and to design a study that answers this question. Please see specific details on Blackboard

- **Public Policy Students Project Assignment**

You will complete this assignment individually. The tasks will largely be completed over the second half of the semester. You will have the opportunity to choose a contemporary journal

article of your interest using one of the methodologies covered in this course. The article will need to be accompanied with data (which most econ journals do require from the authors) or you can find the data yourself. You will then try to replicate the results from the paper, including descriptive statistics. Additionally, you will add your own extension to the paper and argue why you pick a certain extension.

## GRADES

### **Econ undergraduates**

Instructor meeting	5%
Quiz on syllabus	5%
Assignment 1	5%
Assignment 2	5%
Assignment 3	5%
Midterm – popular media	15%
Experimental design	15%
Experimental analysis	15%
Final paper/Quasi-experimental analysis	15%
Final Presentation	10%
Engagement	5%

### **Public Policy graduate students**

Instructor meeting	5%
Quiz on syllabus	5%
Assignment 1	5%
Assignment 2	5%
Assignment 3	5%
Midterm – popular media	15%
Extension	10%
Experimental analysis	10%
Final paper	20%
Final Presentation	15%
Engagement	5%

SCHEDULE INCLUDING DUE DATES

Date	In-class topic	Required readings	Optional readings	Due dates
Jan 26	Introductions & overview of the semester			In-class quiz about syllabus
Jan 31	Overview of causal inference	FEDAI, Chapter 1  MHE, Chapters 1 & 2 (pp. 3-24)		
Feb 2	Overview of causal inference	Gertler, Paul J., Patrick Premand, Sebastian Martinez, Christel M.J. Vermeersch, and Laura B. Rawlings. 2010. <i>Impact Evaluation in Practice</i> . Chapter 3		
Feb 7	Randomized trials: basics	FEDAI Chapter 2		
Feb 9	Randomized trials: basics	Gertler, Paul J., Patrick Premand, Sebastian Martinez, Christel M.J. Vermeersch, and Laura B. Rawlings. 2010. <i>Impact</i>	Bruhn, Miriam, and David McKenzie. 2009. "In Pursuit of Balance: Randomization in Practice in Development Field Experiments." <i>American Economic Journal: Applied Economics</i> 1(4):200-232.	

		<i>Evaluation in Practice</i> . Chapter 4.		
Feb 14	Randomized trials: inference	FEDAI Chapter 3		Assignment 1 due
Feb 16	Randomized trials: inference			
Feb 21	Randomized trials: covariates	FEDAI Chapter 4		Research question due/ Replication paper picked
Feb 23	Randomized trials: covariates			Assignment 2 due
Feb 28	Randomized trials: noncompliance	FEDAI, Chapters 5-6		
Mar 2	Randomized trials: noncompliance	Gertler, Paul J., Patrick Premand, Sebastian Martinez, Christel M.J. Vermeersch, and Laura B. Rawlings. 2010. <i>Impact Evaluation in Practice</i> . Chapter 11  Kvangraven, Ingrid. 2020. <i>Impoverished economics? A critical assessment</i>	<a href="https://chrisblattman.com/blog/2015/12/07/if-you-run-field-experiments-this-might-be-paper-that-will-make-it-harder-to-publish-your-work-in-a-few-years/">https://chrisblattman.com/blog/2015/12/07/if-you-run-field-experiments-this-might-be-paper-that-will-make-it-harder-to-publish-your-work-in-a-few-years/</a>	

		<i>of the new gold standard.</i>		
Mar 7	Randomized trials: power	FEDAI Appendix 3.1.		Assignment 3 due
Mar 9	BUFFER			
Mar 14	SPRING BREAK			
Mar 16	SPRING BREAK			
Mar 21	Midterm workday			
Mar 23	Instrumental variables			Midterm product due
Mar 28	Instrumental variables	MHE, Sections 4.1		Experimental design due/ Extension due
Mar 30	Instrumental variables	MHE, Sections 4.4.1-4.4.2		
Apr 4	Panel methods	MHE Sections 5.1-5.3 (inclusive)		Experimental data provided
Apr 6	Panel methods	Gertler, Paul J., Patrick Premand, Sebastian Martinez, Christel M.J. Vermeersch, and Laura B. Rawlings. 2010. <i>Impact Evaluation in Practice</i> . Chapter 6.	Sritharan, Narayani. WORKING PAPER. <i>How public opinions about the Central Government can affect reconciliation processes in postwar countries – Evidence from Sri Lanka</i> .  Girardi, Daniele. 2020. "Partisan Shocks and Financial Markets: Evidence from Close National Elections." <i>American Economic Journal: Applied Economics</i> , 12 (4): 224-52.	

Apr 11	Guest Lecturer (Professor Ariel BenYishay) on RCTs and breakfast	TBD	TBD	
Apr 13	Synthetic control	Abadie, Alberto; Diamond, Alexis; Hainmueller, Jens, "Synthetic Control Methods for Comparative Case Studies: Estimating the Effect of California's Tobacco Control Program" <i>Journal of the American Statistical Association</i> , vol. 105, no. 490, June 2010, pp. 493-505.		
Apr 18	Synthetic control	Abadie, Alberto and Javier Gardeazabal, "The Economic Costs of Conflict: A Case Study of the Basque Country," <i>American Economic Review</i> ,		Experimental analysis due

		March 2003, pp. 113-132.		
Apr 20	BUFFER			
Apr 25	Final project workday			
Apr 27	Final project workday			
May 2	Presentations			
May 4	Presentations			
May 12				Final papers due



### STUDENT WELLBEING

W&M recognizes that students juggle different responsibilities and can face challenges that make learning difficult. If you or someone you know is experiencing a challenge related to an emotional, psychological, physical, medical, material or accessibility concern, I encourage you to reach out to resources on campus. For psychological/emotional stress, please consider reaching out to the [W&M Counseling Center](#) (757-221-3620, 240 Gooch Dr., 2nd floor). For physical/medical concerns, please consider reaching out to the [W&M Health Center](#) at (757-221-4386, 240 Gooch Drive). For additional support or resources, please contact the Dean of Students by submitting an [online Care Report](#) or by phone or email (757-221-2510, [deanofstudents@wm.edu](mailto:deanofstudents@wm.edu)). For a list of many other resources available to students, see [Health and Wellness Resources for Students](#).

### COURSE POLICIES

**Grading scale.** Letter grades for the course will be based on a standard 100-point scale as determined by the following ranges: A ( $\geq 93$  through 100), A- ( $\geq 90$  through  $< 93$ ), B+ ( $\geq 88$  through  $< 90$ ), B ( $\geq 83$  through  $< 88$ ), B- ( $\geq 80$  through  $< 83$ ), C+ ( $\geq 78$  through  $< 80$ ), C ( $\geq 73$  through  $< 78$ ), C- ( $\geq 70$  through  $< 73$ ), D+ ( $\geq 68$  through  $< 70$ ), D ( $\geq 63$  through  $< 68$ ), D- ( $\geq 60$  through  $< 63$ ), and F (less than 60).

**Inclusivity** Every student in this class, regardless of background, sex, gender, race, ethnicity, class, political affiliation, physical or mental ability or any identity category, is a valued and equal member of the group. We all bring different experiences to this class and no one experience has more value or import than another. In fact, it is our different experiences that will enrich the course content. I encourage every student to share their own experiences as they are relevant to the course, but I also stress that no student is ever presumed to speak for anything or anyone more than their own experience or point of view. Furthermore, in this classroom, you have the right to determine your own identity. You have the right to be called by whatever name you wish, and for that name to be pronounced correctly. You have the right to be referred to by whatever pronoun you identify. You have the right to adjust those things at any point. If there are aspects of the instruction of this course that result in barriers to your inclusion or a sense of alienation from the course content, please contact me privately without fear of reprisal. If you feel uncomfortable contacting me, please contact the Office of the Dean of Students.

**Blackboard.** The Blackboard website is the central repository for the course. I will use it to communicate to the class as a group, accept and grade response paper submissions, and post materials for the course. Make sure that you regularly check both it and the email account associated with Blackboard.

**Etiquette.** Please do not use devices during class for non-class-related activities. Several methodologically strong academic studies show that using laptops during class to browse social media, shop, catch-up on email, etc. distracts other students, lowers the quality of classroom interaction, and affects the multi-taskers' grades and comprehension. I reserve the right to ask you to close laptops during face-to-face meetings.

**COVID and this course.** Please follow W&M requirements and guidelines about COVID safety which are available here:

[https://www.wm.edu/about/administration/emergency/current\\_issues/coronavirus/](https://www.wm.edu/about/administration/emergency/current_issues/coronavirus/)

If/when you need to miss class, please let me know as soon as possible and follow-up with me about your plans to catch up on what you missed. I anticipate that the class will be held largely in-person, but I also anticipate certain adjustments, like making class recordings available to students who notify that they are missing class due to COVID, or *temporarily* holding class by Zoom if a high proportion of students cannot attend on a given day, or if I am sick/exposed.

**Disabilities.** W&M accommodates students with disabilities in accordance with federal laws and university policy. Any student who feels they may need an accommodation based on the impact of a learning, psychiatric, physical, or chronic health diagnosis should contact Student Accessibility Services staff at 757-221-2512 or at [sas@wm.edu](mailto:sas@wm.edu) to determine if accommodations are warranted and to obtain an official letter of accommodation. For more information, please visit [www.wm.edu/sas](http://www.wm.edu/sas).

**Honor Code.** Academic integrity is at the heart of W&M, and we all are responsible for upholding the ideals of honor and integrity. The [Student Handbook](#) includes your responsibilities as a student and the full Code. I expect your full participation and observance of the Honor Code.

#### [COURSE RESOURCES](#)

**Economics Stata Lab.** If you would like some help using Stata for problem sets, please take advantage of the Stata Lab. See more here:

<https://www.wm.edu/as/economics/currentstudents/statalab/index.php>

**Writing Resources Center.** A great resource to assist you with your final research papers, mid-term media product, and final presentations. Feel free to book a time with them to meet and chat here:

<https://www.wm.edu/as/wrc/>

#### [SPECIFICS FOR PUBLIC POLICY GRADUATE STUDENTS](#)

- Under no circumstances may any student receive credit for both the 400-level and 500-level versions of the same cross-listed course.
- No credit towards a graduate degree is allowed for a course numbered above 499 in which a student receives a grade below C (grade point = 2.0).

**The A&S Graduate Center.** The A&S Graduate Center supports all W&M graduate students in various ways, including with writing skills. Students are encouraged to make use of the Graduate Writing Resources Center (see <https://www.wm.edu/as/graduate/graduate-center/gwrc/index.php>) and to check out the other workshops, programs, and resources available within the A&S Graduate Center (see <https://www.wm.edu/as/graduate/studentresources/index.php>).