

**McGill University**  
**Institute for the Study of International Development**  
**INTD 356: Quantitative Methods for Development**  
**FALL 2022**

**Course schedule**

Lectures: Monday & Wednesday 4:05 PM – 5:25 PM  
Schedule: 08/31/2022 - 12/05/2022  
Location: Rutherford Physics Building #118

**Instructor Information**

Name: Zarlisht M. Razeq  
Email: [zarlisht.muhammadrazeq@mail.mcgill.ca](mailto:zarlisht.muhammadrazeq@mail.mcgill.ca)  
Weeks: 2-15  
Office hours: Wednesdays, 1:30 PM – 3:30 PM, or in urgent cases by appointment (please email me)  
Location: 12-6, 3610 McTavish Street

**TA Information**

Name: Adam Aberra  
Email: [adam.aberra@mail.mcgill.ca](mailto:adam.aberra@mail.mcgill.ca)  
Weeks: 5-14  
Office hours: Thursdays 4:45 PM – 5:45 PM & Fridays 1:00 PM – 2:00 PM  
Location: on Zoom (link will be posted on myCourses)

**Prerequisites:** there is no prerequisite for this course.

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**Description and objectives**

Development intervention is at the heart of development practice and policy. The success of new development projects, programs, and policies depends on knowing whether similar interventions in other settings were effective, and if not, what should the development community do to increase the effect in the new settings? This is essentially what impact evaluation does. Using statistical analysis and causal inference, impact evaluation answers: Did investment in rural road infrastructure increase agricultural production in India? Did the implementation of Better Factories Cambodia program improve fundamental worker rights in Cambodian factories? What was the most efficient tool for microenterprise development in Tanzania? Did an increase in education spending increase school performance among students in Indonesia? Why are disadvantaged students in rural China not going on to high school? What is the effect of promoting schooling access to girls in resource-poor nations on child nutrition in Zimbabwe?

As an introduction to quantitative methods for impact evaluation, this course engages with these questions and focuses on the work of international development organizations in developing countries. It provides an overview of the key quantitative methods for impact evaluation. The students will be taught how to engage with simple but rigorous data analytics, design and implement evaluation plans, run regression analysis, or implement other main methods for impact evaluation and the assessment of the treatment effect of an intervention (a program). I will start with the basic concepts in statistics and then introduce an intuitive conceptual framework to think about causal effects, i.e., whether program X has a causal impact on outcome Y given other conditions. In the first part of this course, we will learn the fundamental of

statistics. In the second part, we will learn about key causal inference methods and take a closer look at several real-world development projects and programs impact evaluation, published in scholarly journals.

In addition to standard tests and labs/conference sessions, a key component of the course will be graded assignments where students will work in groups and propose an impact evaluation plan for real-world ongoing development projects. The primary goal of assignments is to assess students' ability to think critically, be able to apply the learned concepts to specific cases, and think about the policy impact of development evaluation. The labs/conferences component of this course aims to show students how to use STATA to implement basic statistical analysis for impact evaluation.

By the end of the course, students are expected to:

- understand the basics of statistical concepts and causality, treatment effect, and intervention;
- demonstrate familiarity with key methods for impact evaluation in development;
- be able to perform simple statistical tasks in STATA;
- be able to design a research plan for impact evaluation and apply the skills outlined above.

### Course materials

1. Lecture slides: I will upload lecture slides and other material before each class.
2. REQUIRED: you are required to read or at least consult the assigned chapters from each of the following books before the class.

For the first part of the course (Fundamentals of Statistics), I will use various chapters from the following two textbooks. If you want to purchase one, the first one is more helpful and designed for social sciences. I will use only few sections on probability from the second one:

- Bailey, Michael A. 2016. *Real Stats: using econometrics for political science and public policy*. Oxford University Press. [McGill Library Reserve Collection - 1 Day Loan: HB139 B345 2016] Chapters 1-13.
- Johnson, Richard A., Irwin Miller, and John E. Freund. 2017. *Miller & Freund's probability and statistics for engineers*. Ninth ed. Boston: Pearson. [McGill Library Reserve Collection - 1 Day Loan: HB139 A53984 2015] Certain sections from chapters 2, 3, 5, 6, and 7.

For the second part of the course (Impact Evaluation and Causal Inference), I will use the following sources. The second one is available for free download from the publisher:

- Angrist, Joshua D., and Jorn-Steffen Pischke. 2015. *Mastering 'metrics: The path from cause to effect*. Princeton University Press. [McGill Library Reserve Collection - 1 Day Loan: HB139 A53984 2015]
- Datasets and documentation for optional practice using STATA is available for free download from the publisher [here](#).
- Gertler, Paul J.; Martinez, Sebastian; Premand, Patrick; Rawlings, Laura B.; Vermeersch, Christel M. J., 2016. *Impact Evaluation in Practice, Second Edition*. Washington, DC: Inter-American Development Bank and World Bank. Free download from the publisher is available [here](#).
- In the second part of the course, we will also discuss a number of cases (published articles). I will make the PDF of these articles and additional readings available to you via myCourses.

OPTIONAL: I may refer and use the following source, but you are not required to read or have these:

- Khandker, Shahidur R.; Koolwal, Gayatri B.; Samad, Hussain A. 2010. *Handbook on Impact Evaluation: Quantitative Methods and Practices*. World Bank. Free download from the publisher is available [here](#).
- Datasets and documentation for practice using STATA. Free download from the publisher is available [here](#).

## Software

The software used in lab sessions and lectures is STATA. To get started with STATA, you can use free education resources [here](#). STATA is not an open-source software. You can access this software via two options:

- You can purchase a special 6-month student STATA/BE license (basic edition for mid-sized datasets), which is as expensive as a paperback textbook, [see here](#).
- STATA is also [installed on](#) a limited number of computers in these places: Redpath Library Building 2nd floor, McLennan Library Building Data Lab – 2nd floor (M2-37A), and Macdonald Campus Library eZone.

You can use other software, e.g., R and SPSS, to follow the labs. However, note that some questions in the tests may relate to basic STATA commands. Even if you use other software, I encourage you to “try” at least once working in STATA at the library and familiarize yourself with its basic functions.

## Requirements and assessment

A summary of the requirements is as follows:

	Assignment	%	Due
1.	Labs/conferences attendance and participation	10%	
2.	Individual tests (25% each)	25% 25%	Test 1: October 05 (during the lecture) Test 2: November 28 (during the lecture)
3.	Project evaluation plan proposal (group of 4)	10%	October 13 (upload on myCourses)
4.	Project evaluation plan (same group)	30%	December 12 (upload on myCourses)

More specifically:

1. Labs/conference attendance and participation (10%): you are expected to attend all 8 lab sessions. Your TA will lead these sessions. He will discuss and demonstrate how to use STATA and implement exercises on topics highlighted in the course schedule. Please bring your personal laptop to these sessions. Further instructions will be provided directly by your TA and/or posted on myCourses in due course. Your TA will post his do files on myCourses weekly after the last conference in a given week. You can practice with these on your own or try them on a different dataset if you want.
2. Test #1 (25 %): in the 6<sup>th</sup> week of lectures (10/05), you will be tested on readings and lectures covered up to that point. The test will include both multiple-choice—you will need to justify your choice, and open-ended short questions. The test will take place in class and will last approximately 1 hour 20 minutes.

Test #2 (25%): in the 14<sup>th</sup> week of lectures (11/28), you will be tested on readings and lectures covered up to that point. The test will include both multiple-choice – you will need to justify your choice, and open-ended short questions. The test will take place in class and will last approximately 1 hour 20 minutes.

○ Make-up policy: if for any serious reasons, you miss any of the two tests, I will allow you to take a separate test (with new questions) on the 14<sup>th</sup> week of lectures during extra time. Please make sure to email me about the reason for missing a test and attach any supporting documents.

3. Project evaluation plan: for this assignment, you will work with three other students (group of four). You will be provided with a list of ongoing active World Bank projects to choose from. All details and grading criteria will be posted on myCourses in due course. This assignment must be submitted on myCourses in a PDF format. This element of your grade comprises two parts:
  - A. Project evaluation plan *proposal* (10%): you will be asked to submit a one-page outline of your proposed project evaluation plan outlining the project details, your research question, your proposed method, sources of data, and a list of references you will use. A template with further instructions and grading criteria will be posted on myCourses in due course.
  - B. Project evaluation plan (group of 4) (30%): based on your evaluation proposal and written feedback received, you will design a sound and feasible evaluation plan (approximately 2000-2500 words, excluding bibliography and appendices), using methods covered in this course. Think about this as an evaluation plan that you (as a development economist or evaluator) are submitting to an international agency for a competitive funding opportunity. Your plan should convey to your reader that you have a clear and well-justified plan/method for evaluation and have chosen the most appropriate method for evaluation (more details will be posted on myCourses in due course).

Since it is a group work and all four students will receive the same grade for this assignment, I encourage you to always work as a team and address any conflict among yourself. If you fail to address a team conflict after all options, you should email me asap, explaining the issue and cc-ing the entire group. No individual complain will be accepted.

- Make-up policy: if for any serious reasons, you (as a group) cannot meet the deadline, you may receive an extension, depending on the collective reason for the delay. Please make sure to email me about the reason and attach all supporting document as soon as possible. If your assignment is not pre-approved for an extension, late submission policy will apply.

More details (instruction, templates, and grading criteria) for each assignment are posted on myCourses in due course. It is students' responsibility to follow these and make sure their submitted assignment meets the requirements.

## Course and University Policies

**Office hours and e-mail:** weekly in-person office hours are held on Wednesdays 1:30-3:30 PM. If for serious reasons, you cannot come to my (or your TA's office hours) in person, and email cannot resolve your issue, it is possible to request a 15-minute Zoom appointment by emailing me at least two days in advance. I will try to reply to your e-mail within 24 hours.

**Classroom etiquette:** I want to create a welcoming and stimulating learning environment for you and your peers. To do this, I ask that you respect a few basic ground rules: a) I start the class on time and expect you to arrive in class on time. People coming in late disrupt the professor and their fellow students; b) Please remember to silence your cell phones.

**Equity, diversity, and inclusion (EDI) statement:** I respect the diversity in our community that includes, but is not limited to, race, ethnicity, national origin, gender identity, gender expression, sexual orientation, age, and religion. As the instructor of this course, I strive to provide an inclusive learning environment.

**Late submission and extension:** Late assignments will be penalized by 10% per 24 hours – including weekends and holidays – unless relevant documentation is provided. All assignments must be submitted on myCourses in PDF format (no Word document, no copy-paste online).

**Academic integrity:** McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism, and other academic offenses under the [Code of Student Conduct and Disciplinary Procedures](#). In addition, students are not permitted to hand in the same assignment in two or more courses. Work submitted for evaluation as part of this course may be checked with text-matching software within myCourses.

**Language policy:** In accord with McGill University's [Charter of Students' Rights](#), students in this course have the right to submit in English or in French any written work that is to be graded.

**Regrading:** Students that wish to have an assignment regraded should follow the procedure set up by the ISID outlined in detail [here](#).

**Copyright integrity:** All slides, video recordings, lecture notes, handouts, etc. remain the instructor's intellectual property. Students can use them in this course for purposes of their own learning (and research, with proper referencing/citation), but they are not permitted to "distribute or post any instructors' course materials in any public domain without explicit prior consent." See [here for more information](#). Additional readings, book chapters, and other copyrighted materials posted on myCourses are for your personal use in this course only and should not be shared with others.

**Extraordinary circumstances:** In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.

**Course- evaluations:** End-of-course evaluations are one way that McGill works towards maintaining and improving the quality of courses and the student's learning experience. You are notified by e-mail when the evaluations are available. Please note that a minimum number of responses must be received for results to be available to students.

**Special needs:** Students with special needs should not hesitate to contact me as soon as possible so that arrangements can be made. Arrangements can also be made to accommodate special needs such as religion, chronic illness, social discomfort or else. To avoid penalties, it is imperative to inform me of any

possible delay as soon as possible so that we can work out a solution. In addition, many students may face mental health challenges that can impact not only their academic success but also their ability to thrive in our campus community. Please reach out for support when you need it; many [resources](#) are available on-campus, off-campus, and online.

**Land acknowledgment:** McGill University is on the traditional territory of the Anishinaabeg and Haudenosaunee Nations and a place which has long served as a site of meeting and exchange amongst various Indigenous nations.

## Course schedule

Some topics might be subject to (mostly minor) revisions during the term.

Week	Date	
<b>INTRODUCTION</b>		
1	W 08/31	<b>1. What is impact evaluation?</b> <ul style="list-style-type: none"> <li>Required readings: <ul style="list-style-type: none"> <li>Gertler et al. (2016), chapter 1: <i>Why evaluate?</i></li> <li>Gertler et al. (2016), chapter 2: <i>Preparing for an evaluation</i></li> </ul> </li> </ul>
2	M 09/05	<i>Labour Day (holiday)</i>
	W 09/07	<b>2. What is causal inference?</b> <ul style="list-style-type: none"> <li>Required readings: <ul style="list-style-type: none"> <li>Bailey (2016), chapter 1: <i>Quest for causality</i></li> <li>Gertler et al. (2016), chapter 3: <i>Causal inference and counterfactuals</i></li> </ul> </li> </ul>
<b>PART I: FUNDAMENTALS OF STATISTICS</b>		
3	M 09/12	<b>3. Describing data:</b> <ul style="list-style-type: none"> <li>Required readings: <ul style="list-style-type: none"> <li>Bailey (2016), chapter 2: <i>Stats in the wild: good data practices</i></li> <li>Richard et al. (2017), chapter 2: <i>Organizing and describing data</i> (sections 2.2-2.7)</li> </ul> </li> </ul>
	W 09/14	<b>4. Probability and distributions</b> <ul style="list-style-type: none"> <li>Required readings: <ul style="list-style-type: none"> <li>Richard et al (2017), chapter 3: <i>Probability</i> (sections 3.1-3.3)</li> <li>Richard et al (2017), chapter 5: <i>Probability densities</i> (sections 5.1-5.4)</li> </ul> </li> </ul>
4	M 09/19	<b>5. Sample estimation and hypothesis test</b> <ul style="list-style-type: none"> <li>Required readings: <ul style="list-style-type: none"> <li>Richard et al (2017), chapter 6: <i>Sampling distribution</i> (sections 6.1-6.4)</li> <li>Richard et al (2017), chapter 7: <i>Inference concerning a mean</i> (sections 7.1-7.8)</li> </ul> </li> </ul>
	W 09/21	<b>6. Simple linear regression</b> <ul style="list-style-type: none"> <li>Required readings: <ul style="list-style-type: none"> <li>Bailey (2016), chapter 4: <i>Hypothesis testing and interval estimation: answering research questions</i></li> <li>Bailey (2016), chapter 3: <i>Bivariate OLS: the foundation of s statistical analysis</i></li> </ul> </li> <li>Optional readings: <ul style="list-style-type: none"> <li>Angrist &amp; Pischke (2014), chapter 2: <i>Regression</i></li> </ul> </li> </ul>
5	M 09/26	<b>7. Multiple linear regression</b> <ul style="list-style-type: none"> <li>Required readings: <ul style="list-style-type: none"> <li>Bailey (2016), chapter 5: <i>Multivariate OLS: where the action is</i></li> </ul> </li> </ul> <p>Lab 1 this week: Introduction/using STATA</p>
	W 09/28	<b>8. Regression: categorical data</b> <ul style="list-style-type: none"> <li>Required readings: <ul style="list-style-type: none"> <li>Bailey (2016), chapter 6: <i>Dummy variables: smarter than you think</i></li> <li>Bailey (2016), chapter 12: <i>Dummy dependent variables</i></li> </ul> </li> </ul>
6	M 10/03	<b>9. Log, interaction, and fixed effect</b> <ul style="list-style-type: none"> <li>Required readings: <ul style="list-style-type: none"> <li>Bailey (2016), chapter 7: <i>Transforming variables, comparing variables</i></li> <li>Bailey (2016), chapter 8: <i>Using fixed effects models to fight endogeneity in panel data and difference-in-difference models</i></li> </ul> </li> </ul> <p>Lab 2 this week: Descriptive statistics</p>
	W	<b>TEST 1</b>

	10/05	
7	M 10/10	Thanksgiving (holiday)
	10/11- 10/12	Fall Break
	TR 10/13	<b>10. Log, interaction, and fixed effect (cont.)</b> <ul style="list-style-type: none"> <li>Required readings: <ul style="list-style-type: none"> <li>Bailey (2016), chapter 13: <i>Time series: dealing with stickiness over time</i> <i>Make-up lecture day for Monday class</i></li> </ul> </li> </ul>
	10/13	PROJECT EVALUATION PLAN PROPOSAL
<b>PART II: IMPACT EVALUATION METHODS AND CAUSAL INFERENCE</b>		
8	M 10/17	<b>11. Randomized controlled trials</b> <ul style="list-style-type: none"> <li>Required readings: <ul style="list-style-type: none"> <li>Angrist &amp; Pischke (2014), chapter 1: <i>Randomized trials</i></li> <li>Gertler et al. (2016), chapter 4: <i>Randomized assignment</i></li> </ul> </li> <li>Optional readings: <ul style="list-style-type: none"> <li>Bailey (2016), chapter 10: <i>Experiments: dealing with real-world challenges</i></li> </ul> </li> </ul> <p>Lab 3 this week: Regression</p>
	W 10/19	<b>12. Randomized controlled trials: case study</b> <ul style="list-style-type: none"> <li>Required readings: <ul style="list-style-type: none"> <li>Berge, L. I. O., Bjorvatn, K., &amp; Tungodden, B. (2015). Human and financial capital for microenterprise development: Evidence from a field and lab experiment. <i>Management Science</i>, 61(4), 707-722. <a href="https://doi.org/10.1287/mnsc.2014.1933">https://doi.org/10.1287/mnsc.2014.1933</a></li> </ul> </li> <li>Optional readings: <ul style="list-style-type: none"> <li>Duflo, E., Dupas, P., &amp; Kremer, M. (2011). Peer effects, teacher incentives, and the impact of tracking: Evidence from a randomized evaluation in Kenya. <i>American Economic Review</i>, 101(5), 1739-74. <a href="https://doi.org/10.1257/aer.101.5.1739">https://doi.org/10.1257/aer.101.5.1739</a></li> </ul> </li> </ul>
9	M 10/24	<b>13. Randomized controlled trials: case study</b> <ul style="list-style-type: none"> <li>Required readings: <ul style="list-style-type: none"> <li>Yi, H., Song, Y., Liu, C., Huang, X., Zhang, L., Bai, Y., ... &amp; Rozelle, S. (2015). Giving kids a head start: The impact and mechanisms of early commitment of financial aid on poor students in rural China. <i>Journal of Development Economics</i>, 113, 1-15. <a href="https://doi.org/10.1016/j.jdeveco.2014.11.002">https://doi.org/10.1016/j.jdeveco.2014.11.002</a></li> </ul> </li> <li>Optional readings: <ul style="list-style-type: none"> <li>McKenzie, D. (2017). Identifying and spurring high-growth entrepreneurship: Experimental evidence from a business plan competition. <i>American Economic Review</i>, 107(8), 2278-2307. <a href="https://doi.org/10.1257/aer.20151404">https://doi.org/10.1257/aer.20151404</a></li> </ul> </li> </ul> <p>Lab 4 this week: Randomized controlled trials</p>
	W 10/26	<b>14. Difference-in-differences method</b> <ul style="list-style-type: none"> <li>Required reading: <ul style="list-style-type: none"> <li>Angrist &amp; Pischke (2014), chapter 5: <i>Difference-in-differences</i></li> <li>Gertler et al. (2016), chapter 7: <i>Difference-in-differences</i></li> </ul> </li> <li>Optional readings: <ul style="list-style-type: none"> <li>Khandker et al. (2010), chapters 5: <i>Double difference</i></li> </ul> </li> </ul>
10	M 10/31	<b>15. Difference-in-differences method: case study</b> <ul style="list-style-type: none"> <li>Required readings: <ul style="list-style-type: none"> <li>Robertson, R. (2020). Lights on: How transparency increases compliance in Cambodian global value chains. <i>ILR Review</i>, 73(4), 939-968. <a href="https://doi.org/10.1177/0019793919893333">https://doi.org/10.1177/0019793919893333</a></li> </ul> </li> <li>Optional readings: <ul style="list-style-type: none"> <li>Khandelwal, A. K., Schott, P. K., &amp; Wei, S. J. (2013). Trade liberalization and embedded institutional reform: Evidence from Chinese exporters. <i>American Economic Review</i>, 103(6), 2169-95. <a href="https://doi.org/10.1257/aer.103.6.2169">https://doi.org/10.1257/aer.103.6.2169</a></li> </ul> </li> </ul>

	W 11/02	<p><b>16. Difference-in-differences method: case study</b></p> <ul style="list-style-type: none"> <li>• Required readings: <ul style="list-style-type: none"> <li>○ Shamdasani, Y. (2021). Rural road infrastructure &amp; agricultural production: Evidence from India. <i>Journal of Development Economics</i>, 152, 102686. <a href="https://doi.org/10.1016/j.jdeveco.2021.102686">https://doi.org/10.1016/j.jdeveco.2021.102686</a></li> </ul> </li> <li>• Optional readings: <ul style="list-style-type: none"> <li>○ Al-Samarrai, S., Shrestha, U., Hasan, A., Nakajima, N., Santoso, S., &amp; Wijoyo, W. H. A. (2018). Introducing a performance-based component into Jakarta's school grants: What do we know about its impact after three years? <i>Economics of Education Review</i>, 67, 110-136. <a href="https://doi.org/10.1016/j.econedurev.2018.10.005">https://doi.org/10.1016/j.econedurev.2018.10.005</a></li> </ul> </li> </ul>
11	M 11/07	<p><b>17. Regression discontinuity</b></p> <ul style="list-style-type: none"> <li>• Required readings: <ul style="list-style-type: none"> <li>○ Angrist &amp; Pischke (2014), chapter 4: <i>Regression discontinuity design</i></li> <li>○ Gertler et al. (2016), chapter 6: <i>Regression discontinuity design</i></li> </ul> </li> <li>• Optional readings: <ul style="list-style-type: none"> <li>○ Bailey (2016), chapter 11: <i>Regression discontinuity: looking for jumps in data</i></li> </ul> </li> </ul> <p>Lab 5 this week: DID</p>
	W 11/09	<p><b>18. Regression discontinuity: case study</b></p> <ul style="list-style-type: none"> <li>• Required readings: <ul style="list-style-type: none"> <li>○ Makate, M., &amp; Makate, C. (2018). Educated Mothers, Well-fed and healthy children? Assessing the impact of the 1980 school reform on dietary diversity and nutrition outcomes of Zimbabwean children. <i>The Journal of Development Studies</i>, 54(7), 1196-1216. <a href="https://doi.org/10.1080/00220388.2017.1380796">https://doi.org/10.1080/00220388.2017.1380796</a></li> </ul> </li> <li>• Optional readings: <ul style="list-style-type: none"> <li>○ Meller, M., and Litschig, S. (2014). Saving Lives: Evidence from a Conditional Food Supplementation Program. <i>Journal of Human Resources</i>, 49(4): 1014-1052. <a href="https://doi.org/10.3368/jhr.49.4.1014">https://doi.org/10.3368/jhr.49.4.1014</a></li> </ul> </li> </ul>
12	M 11/14	<p><b>19. Instrumental variables</b></p> <ul style="list-style-type: none"> <li>• Required readings: <ul style="list-style-type: none"> <li>○ Angrist &amp; Pischke (2014), chapter 3: <i>Instrumental variables</i></li> <li>○ Bailey (2016), chapter 9: <i>Using exogenous variation to fight endogeneity</i></li> </ul> </li> <li>• Optional readings: <ul style="list-style-type: none"> <li>○ Gertler et al. (2016), chapter 5: <i>Instrumental variables</i></li> <li>○ Khandker et al. (2010), chapter 6: <i>Instrumental variable estimation</i></li> </ul> </li> </ul> <p>Lab 6 this week: Regression discontinuity</p>
	W 11/16	<p><b>20. Instrumental variable method: case study</b></p> <ul style="list-style-type: none"> <li>• Required readings: <ul style="list-style-type: none"> <li>○ Acemoglu, D., Johnson, S., and Robinson, J. A. (2001), "The Colonial Origins of Comparative Development: An Empirical Investigation." <i>American Economic Review</i>, 91(5): 1369-1401. <a href="https://doi.org/10.1257/aer.91.5.1369">https://doi.org/10.1257/aer.91.5.1369</a> [pages 1369-1396 only]</li> </ul> </li> <li>• Optional readings: <ul style="list-style-type: none"> <li>○ Atkin, D., Khandelwal, A. and A. Osman (2017), "Exporting and Firm Performance: Evidence from a Randomized Experiment," <i>Quarterly Journal of Economics</i>, 132(2): 551-615. <a href="https://doi.org/10.1093/qje/qjx002">https://doi.org/10.1093/qje/qjx002</a></li> </ul> </li> </ul>
13	M 11/21	<p><b>21. Matching</b></p> <ul style="list-style-type: none"> <li>• Required readings: <ul style="list-style-type: none"> <li>○ Gertler et al. (2016), chapter 8: <i>Matching</i></li> <li>○ Khandker et al. (2010), chapter 4: <i>Propensity score matching</i></li> </ul> </li> </ul> <p>Lab 7 this week: Instrumental variable</p>
	W 11/23	<p><b>22. Matching: case study</b></p>

		<ul style="list-style-type: none"> <li>• Required readings: <ul style="list-style-type: none"> <li>○ Becerril, J., and Abdulai, A. (2010). The Impact of Improved Maize Varieties on Poverty in Mexico: A Propensity Score-Matching Approach. <i>World Development</i>, 38(7): 1024-1035. <a href="https://doi.org/10.1016/j.worlddev.2009.11.017">https://doi.org/10.1016/j.worlddev.2009.11.017</a></li> </ul> </li> <li>• Optional readings: <ul style="list-style-type: none"> <li>○ Lederman, D., Olarreaga, M., &amp; Zavala, L. (2016). Export promotion and firm entry into and survival in export markets. <i>Canadian Journal of Development Studies/Revue canadienne d'études du développement</i>, 37(2), 142-158. <a href="https://doi.org/10.1080/02255189.2016.1131671">https://doi.org/10.1080/02255189.2016.1131671</a></li> </ul> </li> </ul>
14	M 11/28	TEST 2
		Lab 8 this week: Matching
	W 11/30	<b>23. The importance of a rigorous design</b> <ul style="list-style-type: none"> <li>• Required readings: <ul style="list-style-type: none"> <li>○ Clemens, M. A., &amp; Demombynes, G. (2011). When does rigorous impact evaluation make a difference? The case of the Millennium Villages. <i>Journal of Development Effectiveness</i>, 3(3), 305-339. <a href="https://doi.org/10.1080/19439342.2011.587017">https://doi.org/10.1080/19439342.2011.587017</a></li> </ul> </li> </ul>
15	M 12/05	<b>24. Policy implication</b> <ul style="list-style-type: none"> <li>• Required readings: <ul style="list-style-type: none"> <li>○ Gertler et al. (2016), chapter 14: <i>Disseminating results and achieving policy impact</i></li> </ul> </li> </ul>
	M 12/12	PROJECT EVALUATION PLAN

**Other important university-wide [dates to note](#):**

- 09/13: Add/drop deadline
- 09/21: Course Withdrawal with Refund
- 10/25: Course Withdrawal with NO Refund
- 12/07-12/21: Fall examination period