Course Title:	Data and Development
Instructor:	Anand Murugesan
ECTS:	4
Term:	Winter 2020
Module:	Mandatory Elective

Relation to other courses: This course is at the intermediate level and will require that the student has taken previous courses in empirical methods, covering fundamental concepts such as Ordinary Least Squares (OLS) and Maximum Likelihood Estimation (MLE) and an exposure to causal inference methods such as Randomized Control Trials, Instrumental Variables (IV), and Difference-in-Difference estimation, which we will review and further build upon.

Background and Overall Aim of the Course:

The primary goal of this course is twofold (1) an introduction to persistent and emerging issues in development (2) advancing training in using data (experimental, observational, survey) to analyze problems of development. We will focus on the role of individuals, households, institutions, and policies briefly in theory and in detail by empirically engaging with (recent) journal articles.

Learning Outcomes:

At the end of the course, students should be able to (1) use economic concepts to critically evaluate development policies (2) make careful inferences from empirical papers in development for designing policy in specific contexts
(3) implement core empirical tools to analyze and synthesize development issues

Learning Activities and Teaching Methods:

The class will mostly center around two activities: (1) close reading and discussion of seminal and recent papers and (2) the analysis of real data to estimate causal

relationships. Students will be learning-by-doing analysis along with interactive lectures and classroom discussions. Students can expect to spend 30 - 40% of class time on statistical software (STATA/R). The assignments are designed to combine a deeper understanding of issues in development by analyzing real data.

Assessment:

The course requirements are satisfactory completion of the assignments, short test or quiz if any and active participation in class discussions along with submission of the final paper. The problem sets will be provided a letter grade.

Assignments: 30%
Short test/quiz: 10%
Class participation: 10%
Final paper (outline 10%): 50%

Course Content and Readings:
We will spend the first five weeks of the class discussing the theoretical mechanisms (such as poverty traps in week 1) and reviewing the essential empirical toolkit (weeks 2 – 5) with applications to development. I will give a short lecture on each of the "famous five" empirical methods to highlight the key points. We will discuss in detail a paper using that tool. We will then focus on applied topics.

Week 1 – Analytical Framework
Poverty traps: role of undernutrition, health, education

Ray, Debraj, Development Economics, Princeton University Press (Ch. 7)

Deaton, Angus, 2003. "Health, Inequality and Economic Development", Journal of Economic Literature, pp. 113 - 158.

Ahuja et al. 2015. "When Should Governments Subsidize Health? The Case of Mass Deworming," The World Bank Economic Review, Vol. 29, p S9 - S24.

Week 2 – Empirical toolkit
Deworming and health inputs; causal inference

Cohen, Jessica and Pascaline Dupas. 2010. "Free Distribution or Cost-Sharing? Evidence from a Randomized Malaria Prevention Experiment," The Quarterly Journal of Economics, 125(1), pp. 1-45

Joshua D. Angrist and Jorn-Steffen Pischke (2009). Mostly Harmless Econometrics: An Empiricist's Companion. Princeton University Press (MHE, Ch. 2.1 – 2.2)

Paul Gertler et al. (2016). Impact Evaluation in Practice. http://www.worldbank.org/ieinpractice (IEP, Ch. 3)

Week 3 - "Famous Five" Part 1
Labor market outcomes: Random assignment and statistical inference

Kremer, Michael and Edward Miguel. 2004. "Worms: Identifying Impacts on Education and Health in the Presence of Treatment Externalities," Econometrica, 72(1): 159-217.

MHE, Ch. 2.2 – 2.3, Ch. 8

IEP Ch. 4

Week 4 - "Famous Five" Part 2
Returns to schooling: difference-in-difference, fixed effects

A. Colin Cameron and Douglas L. Miller (2015). "A Practitioner's Guide to Cluster-Robust Inference". Journal of Human Resources 50.2, pp. 317–372.

Marianne Bertrand, Esther Duflo, and Sendhil Mullainathan (2004). "How Much Should We Trust Differences-in-Differences Estimates?" Quarterly Journal of Economics 119.1, pp. 249–275.

Esther Duflo (2001). "Schooling and Labor Market Consequences of School Construction in Indonesia: Evidence from an Unusual Policy Experiment". The American Economic Review 91.4

Week 5 - "Famous Five" Part 3
Immigrants and Compulsory schooling: Instrumental variables

Joshua D. Angrist and Alan B. Krueger (1991). "Does Compulsory School Attendance Affect Schooling and Earnings?" Quarterly Journal of Economics 106.4,

MHE, Ch. 4

Week 6 – Environment and Development
Dams, Ecosystems, and Pollution

Esther Duflo and Rohini Pande (2007). "Dams" The Quarterly Journal of Economics 122.2, pp. 601–646.

Jennifer M. Alix-Garcia, Katharine R. E. Sims, and Patricia Yanez-Pagans (2015). "Only One Tree from Each Seed? Environmental Effectiveness and Poverty Alleviation in Mexico's Payments for Ecosystem Services Program". American Economic Journal: Economic Policy

Rema Hanna and Paulina Oliva (2015). "The Effect of Pollution on Labor Supply: Evidence from a Natural Experiment in Mexico City". Journal of Public Economics

Week 7 – Economics of Water, Sanitation, and Hygiene
Health poverty feedback; externalities

Daniel Bennett (2012). "Does Clean Water Make You Dirty? Water Supply and Sanitation in the Philippines". Journal of Human Resources

Sebastian Galiani, Paul Gertler, and Ernesto Schargrodsky (2005). "Water for Life: The Impact of the Privatization of Water Services on Child Mortality". Journal of Political Economy 113.1, pp. 83–120.

Michael Geruso and Dean Spears (2018). "Neighborhood Sanitation and Infant Mortality". American Economic Journal: Applied Economics 10.2, pp. 125–162.

Jyotsna Jalan and Martin Ravallion (2003). "Does Piped Water Reduce Diarrhea for Children in Rural India?" Journal of Econometrics

Week 8 – Gender, aspirations, and norms
Intra-household allocation: diff-in-diff; instrumental variables

Beaman L, Chattopadhyay R, Duflo E, Pande R, Topalova P. Powerful women: does exposure reduce bias? Q. J. Econ. 2009

Chattophadhyay R, Duflo E. Women as policy makers: evidence from a randomized policy experiment in India. Econometrica. 2004

Esther Duflo (2003). "Grandmothers and Granddaughters: Old Age Pension and Intra-Household Allocation in South Africa". World Bank Economic Review

Alberto Alesina, Paula Guiliano and Nathan Nunn. 2013. "On the Origins of Gender Roles: Women and the Plough", The Quarterly Journal of Economics, Vol 128(2)

Week 9 – Psychology and Development

Cognitive loads, scarcity, nudging

Shah, Anuj, Sendhil Mullainathan, Eldar Shafir. 2012. "Some Consequences of Having Too Little," Science, 338, pp. 682-685

Mani, Anandi, Sendhil Mullainathan, Eldar Shafir, Jiaying Zhao. 2013. "Poverty Impedes Cognitive Function," Science, 341, pp. 976- 980

Dupas, Pascaline and Jonathan Robinson, 2013. "Why don't the Poor Save More? Evidence from Health Savings Experiments," American Economic Review, Vol. 103(4): 1138-1171

Week 10 – Discrimination and disparities

Measuring choices and beliefs, justice

Chetty, Raj, Nathaniel Hendren, Maggie R. Jones, and Sonya R. Porter. 2018. "Race and Economic Opportunity in the United States: An Intergenerational Perspective." NBER Working Paper No. 24441.

Abrams, David, Marianne Bertrand, and Sendhil Mullainathan. 2012. "Do Judges Vary in Their Treatment of Race?" Journal of Legal Studies 41 (2): 347–83.

Bertrand, Marianne, and Sendhil Mullainathan. 2004. "Are Emily and Greg More Employable Than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination." American Economic Review 94 (4): 991–1013.

Week 11 – Institutions and Development

Historical data, persistence

Acemoglu, Daron, and James Robinson. 2008. The Role of Institutions in Growth and Development.

Asher, Sam, Paul Novosad, and Charlie Rafkin. 2019. "Intergenerational Mobility in India: Estimates from New Methods and Administrative Data." Dartmouth Working Paper.

Dell, Melissa. 2010. "The Persistent Effects of Peru's Mining Mita." Econometrica 78(6): 1863-1903.

Dell, Melissa, Nathan Lane, and Pablo Querubin. 2019. "The Historical State, Local Collective Action, and Economic Development in Vietnam." Econometrica, forthcoming.

Week 12 – Other (Satellite & text) data for development

Measuring without asking: text mining, image data

Donaldson, D. and Storeygard, A., 2016. Big Grids: Applications of Remote Sensing in Economics. forthcoming, JEP.

Mullainathan, S., 2016. Satellite images can pinpoint poverty where surveys can't. The New York Times.

Turrell, A., Speigner, B.J., Djumalieva, J., Copple, D. and Thurgood, J., 2019. Transforming Naturally Occurring Text Data Into Economic Statistics: The Case of Online Job Vacancy Postings (No. w25837). National Bureau of Economic Research.