

**PUBPOL 639/ EDUC 794**  
**Winter 2015**

**Quantitative Methods for Program Evaluation**

Instructor:

Professor Brian Jacob, [bajacob@umich.edu](mailto:bajacob@umich.edu)

Office hours, Tuesdays, 10am-12noon, Sign up at <http://goo.gl/5LheGr>  
Weill Hall 5124

GSI:

Sarah Anderson, [andersaa@umich.edu](mailto:andersaa@umich.edu), Weill Hall 3204

Office Hours: Mondays, 4-5 pm and Wednesdays 12:30-1:30pm, and by appointment

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Office Hours: Tuesdays 4-5 pm and Thursdays 11:30 am - 12:30 pm, and by appointment

Tutor:

Kriti Agrawal, [kriti@umich.edu](mailto:kriti@umich.edu)

Class Meetings:                   Monday & Wednesday 10-11:30am  
  Weill 1110 (Betty Ford)

Optional Review Section:       Fridays 10-11:30am  
  Weill 1110 (Betty Ford)

**OVERVIEW**

This course introduces students to the use and interpretation of multiple regression analysis and program evaluation. The topical focus will be education, using real data and addressing real policy topics such as class size, teacher certification, education finance and the payoff to education in the labor market. The goals of the class are to:

- 1) Train students to *critically consume* empirical research. We will teach you to read and understand technical, empirical studies and to judge whether they constitute a firm, evidentiary basis for policy.
- 2) Train students to *thoughtfully produce* their own empirical research. We will develop a core set of analytical tools that will allow you to conduct empirical research in a professional setting.

**PREREQUISITE**

The course requires introductory statistics (hypothesis testing, t-statistics, confidence intervals) at the level of PUBPOL 529 or EDUC 793.

**CLICKERS**

The i>clicker audience response system (clickers) will be used regularly in this class. i>clicker devices will be available for purchase from the Computer Showcase in the Michigan Union and Pierpont Commons. For this class you must purchase a clicker device. Personal devices with the web-clicker subscription may not be used.

The cost for a new i>clicker has been around \$33 in recent years, and used i>clickers are available for even less. At the end of the term, your clicker can be sold back to the Computer Showcase. Students can find more information about clickers at <http://blogs.lsa.umich.edu/lc/students/>.

## READING

Read the assigned articles and chapters closely before class (see class participation, below). Get the readings early enough that you are not derailed by any technical difficulties.

### *Textbook*

Stock and Watson, *Introduction to Econometrics* (syllabus references are to 3<sup>rd</sup> edition, but older editions contain virtually identical content).

### *Articles & Book Chapters*

We will read papers and reports on education. These readings will be provided on CTOOLS or via links we will provide to you.

## GRADING

|                                |     |
|--------------------------------|-----|
| Problem Sets (5) – drop lowest | 20% |
| Quizzes (4) – drop lowest      | 24% |
| Take-Home Final Assignment     | 25% |
| Final In-Class Exam            | 25% |
| Participation & Attendance     | 6%  |

## QUIZZES & FINAL

Quizzes will test material from homework, reading and lectures. The quizzes are closed book. You may consult a single index card of notes and use a calculator (no cell phones). Your lowest quiz score will be dropped. There will be no alternate arrangements made for the take-home or in-class final, so plan your schedule accordingly.

## **HOMEWORK**

Homework assignments consist of data analysis and writing short essays (< 1/2 page) that interpret your findings. They are graded on three-point scale: check (=acceptable), check-plus (=great), check-minus (=deficient). Your lowest assignment will be dropped. For the purpose of comparing these problem set grades to quiz and exam grades, a check-plus will count as 95%, a check will count as 85% and a check-minus will count as 75%. Students who do not turn in the assignment at all will receive a score of 50% for the purpose of calculating the final course grade.

You are encouraged to discuss the assignments in groups of up to three students, but *your answers must be written up individually, in your own words*. List your study group members on your problem set.

You will type your problem set, convert to a PDF and upload to CTools. We will annotate the PDF and return it, graded, to CTools. Stata do-files and log files should accompany all your assignments (also in PDF format). For some assignments, you will submit your answer(s) via iclicker at the beginning of class.

## **PARTICIPATION & ATTENDANCE**

During each class, I will ask questions of randomly selected students. This is intended to encourage democratic participation and discourage napping. Names will be drawn from the class list using a random number generator. The questions will be based on the reading assignments, problem sets and lectures.

We will also ask questions in class via clicker in section and class. For example, students will solve a problem, log the answer, and discuss the answer with the class. We understand that you will sometimes forget your clicker or the batteries will fail. We will therefore drop clicker responses for two class sessions from the calculation of the course grade.

## **STATA**

We will program in Stata, a software program used widely by policy analysts. Having “Stata” on your resume makes you more employable, so embrace it!

We provide links to online Stata tutorials and offer training in sections. Since there is no computer lab large enough to hold our class, you will rely on your laptops to practice Stata programming during these sections. *You must therefore own a copy of Stata.*

You can get a Stata license for just this semester at a very affordable price. Order through the Stata website (<http://www.stata.com/order/new/edu/gradplans/us-pickup/>) and then pick up at Computer Showcase.

- We recommend Intercooled Stata (most recent version, 12 or 13 is fine), which works with an unlimited number of observations.
- You could squeak by with Small Stata, but it maxes out at 1,200 observations. Most of our data sets will be under that limit some will not. In the professional world, almost no datasets used by analysts are this small.

## **LAPTOP POLICY/TAKING NOTES**

To keep us focused on the class and on each other, we will keep laptops closed. I will distribute copies of overhead slides for you to take notes on. If you want to store all class material on your laptop, transcribing your handwritten notes after lecture is a great a way to nail the material. I will post a PDF of the slides after lecture to facilitate this process.