Econometrics: Multiple Equation Estimation   **ARE212**: Section Syllabus

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Professor	Max Auffhammer	**Office hours**	Tuesdays, 4:00PM-5:00PM
GSI	Dan Hammer	**OH location**	204 GIANNINI
Section time	Fridays, 11:00AM-12:00PM	**e-mail**	danhammer@berkeley.edu
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The purpose of this document is to outline the sections for Max Auffhammer's econometrics course, the first semester of the ARE econometrics sequence. The purpose of the sections is to introduce R for econometrics, illustrating the theory presented in class with applied examples. Actual data work.

This is my first attempt as a graduate student instructor, so be gentle. I tell you this to warn you that the section notes might change throughout the course, not to reveal my weaknesses — of which I have none. The outline of sections below is based on the progression from previous years. The outline might change, but the final section notes will always be posted on Blackboard at least one week in advance of class. The development version of the notes and R code will be posted to my Github respository:

github.com/danhammer/ARE212

Here, you will be able to see the evolution of the notes, as well as the structure and protocol associated with production code. If you want to collaborate on the notes, join Github and send me an e-mail. I will help get you started, if needed.[1]

January 25	Preliminaries and setup
February 1	Matrix operations in R
February 8	OLS regression from first principles
February 15	Goodness of fit
Februray 22	Hypothesis testing
March 1	Returns to education, empirical example
March 8	Efficiency of GLS
March 15	Large sample properties of OLS
March 22	Empirical example
April 5	Testing for Heteroskedasticity
April 12	Feasible generalized least squares
April 19	Serial correlation
April 26	Instrumental variables
May 3	Spatial analysis in R
May 10	Web scraping in R (*optional*)

The R code for each section is posted on the Github site, and should run on any machine and any operating system. Please feel free to e-mail me with any questions.

Office hours: I don't use my office on campus. In fact, I'm not even sure where it is. Instead, I'll be in 204 Giannini from 4:00pm - 5:00pm on Tuesdays. If you can't make regular office hours, please e-mail me with

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[1]A side note: I have reserved the handle `auffhammer`, just in case Max ever wants to join. I will try dearly to extract the rents associated with absolute scarcity. He claims he'll just get another handle; but this is not a credible threat, since `auffhammer` is an awesome Github handle.

questions! I'll respond promptly, over e-mail or in person.

Homework: Problem sets will be collected at the end of class on the specified date. Ultimately, Max will decide the deductions for late homework. I will not stray from his stated policies.

Grading: The problem sets will be graded on a 100 point scale. A face-plant fail or no-show will be assigned a 0; a tried-and-came-close will be assigned a 70; and a good-showing will be assigned a 100. I can't imagine anyone will take issue with the problem set grades, since they don't matter too much toward the final grade. But see me if you have questions.

Attendance: You are not required to come. I hope the sections are helpful, but I carry no conception that the sections will be uniformly helpful. Only come if the sections are helpful to you.

Quizzes: There are no quizzes. But I scared you, didn't I?

Additional resources: There are many online, free resources to learn R and basic econometrics; and there even exist resources that do both at once. I have listed a few helpful resources for both writing code and scripting econometric routines.

1. **Econometrics in R**, cran.r-project.org/doc/contrib/Farnsworth-EconometricsInR.pdf

2. **R Style Guide**, google-styleguide.googlecode.com/svn/trunk/google-r-style.html

3. **Econometrics**, *Bruce Hansen*, www.ssc.wisc.edu/~bhansen/econometrics/Econometrics.pdf

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