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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 these sections is to introduce R for econometrics, illustrating the theory presented in class with empirical 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:

www.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 18   Matrix operations in R

January 25   OLS regression from first principles

February 2   Goodness of fit

Februray 9   Hypothesis testing

February 16   Efficiency of GLS

February 23   Instrumental variables

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.

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. Partial credit will be awarded for partial answers. I will do my best to award partial credit fairly, compensating both effort and accuracy. The problem set grades don't really matter too much, though, so I can't imagine anyone will take issue with the grades.

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.

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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.

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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