ARE/ECN 240B: ECONOMETRICS

SPRING 2012

Instructor: Aaron Smith (adsmith@ucdavis.edu)
Office Hours: Tuesday and Thursday 11:00-12:00 (SSH 3103)

TA: Wei Zhang (weizhang@primal.ucdavis.edu)
Office Hours: Tuesday and Thursday 1:00-2:00 (SSH 1177)

Class Website: http://are240b.ucdavis.edu. Visit this site regularly for handouts as well as some occasional announcements

Course Summary: This course divides neatly into three sections. The first part provides a rigorous treatment of the theory of extremum estimation, focusing mostly on maximum likelihood. The second part covers several topics related to the identification and estimation of structural economic parameters or causal effects, all under the broad umbrella of GMM estimation. The final part addresses specific data structures: panels and time series.

Lectures: Tuesday and Thursday 9:00-10:20 in Olson 223

Discussion: Friday 9:00-9:50 in Wellman 212 and Friday 11-12 in Robbins 146.

Computing: We will use Stata for the empirical work in the class

Textbook: Hayashi, F. *Econometrics*

Other Reading: Davidson, R. and J.G. MacKinnon, *Econometric Theory and Methods*
Greene, W.H., *Econometric Analysis, 7th Edition* (older editions OK)
Ruud, P.A., *An Introduction to Classical Econometric Theory*
Angrist, J. and J. Pischke, *Mostly Harmless Econometrics*

Assessment: There will be seven homework assignments, a midterm exam and a final exam. The first six homeworks will be due at 9:00 (i.e., before section) on the various Fridays as indicated in the course calendar below. The final homework is due in class on Thursday June 7. I will make the assignments available at least a week before the due date and no late homeworks will be accepted. The final will be worth 50% of your grade, the midterm 25%, and the homeworks the remaining 25%.

Aaron Smith
March 2012

ARE/ECN 240B: SPRING 2012 CALENDAR

	MON	TUE	WED	THUR	FRI	
APR		3 **Econometric Modeling** Structural vs reduced form, MLE vs GMM, estimator properties **Hayashi:** 1 **Greene:** 12 **A&P:** 1, 2, 3.1-3.2	4	5 **Extremum Estimators** Examples in linear regression **Hayashi:** 1.5, 7.1 **Greene:** 14.1, 14.9	6	***WEEK 1***
APR	9	10 **Extremum Estimators** MLE, GMM, NLS **Hayashi:** 7.1 **Greene:** 14.1-14.3 **Ruud:** 14	11	12 **Extremum Estimators** Consistency **Hayashi:** 7.2 **Greene:** 14.4 **Ruud:** 15.1-15.2	13 **HW 1 DUE 9:00**	***WEEK 2***
APR	16	17 **Extremum Estimators** Consistency **Hayashi:** 7.2 **Greene:** 14.4 **Ruud:** 15.1-15.2	18	19 **Extremum Estimators** Asymptotic normality **Hayashi:** 7.3 **Greene:** 14.4,14.5,14.8 **Ruud:** 15.3-15.5	20 **HW 2 DUE 9:00**	***WEEK 3***
APR	23	24 **Extremum Estimators** Asymptotic variance **Hayashi:** 7.3 **Greene:** 14.4,14.5,14.8 **Ruud:** 15.3-15.5	25	26 **Extremum Estimators** LR, Wald, and LM tests **Hayashi:** 7.4 **Greene:** 14.6 **Ruud:** 17	27 **HW 3 DUE 9:00**	***WEEK 4***
APR MAY	30	1 **Extremum Estimators** LR, Wald, and LM tests **Hayashi:** 7.4 **Greene:** 14.6 **Ruud:** 17	2	3 **MIDTERM EXAM**	4	***WEEK 5***
MAY	7	8 **GMM** Linear IV **Hayashi:** 3.1-3.3 **Greene:** 8 **Ruud:** 20	9	10 **GMM** Nonlinear models (link to extremum) **Hayashi:** 3.4-3.5 **Greene:** 13.4 **Ruud:** 21	11	***WEEK 6***

ARE/ECN 240B: SPRING 2012 CALENDAR (part 2)

	MON	TUE	WED	THUR	FRI	
MAY	14	15 **GMM** Overidentification, Hausman test **Hayashi:** 3.6 **Greene:** 8.4, 13.5 **Ruud:** 21	16	17 **GMM** Weak instruments **Greene:** 8.7 **Ruud:** 20.8 **A&P:** 4.6.4	18 **HW 4 DUE 9:00**	***WEEK 7***
MAY	21	22 **GMM** 2SLS **Hayashi:** 3.8 **Greene:** 13.1-13.3 **Ruud:** 26.3-26.4	23	24 **GMM** Systems of equations **Hayashi:** 4 **Greene:** 13.4-13.6 **Ruud:** 26.5-26.6	25 **HW 5 DUE 9:00**	***WEEK 8***
MAY/JUN	28 Memorial Day	29 **Panel Data** Error components models, FE, RE **Hayashi:** 5.1, 5.2 **Greene:** 11.1-11.5 **Ruud:** 24.1-24.4	30	31 **Panel Data** Asymptotic variance **Hayashi:** 5.2 **Greene:** 11.6	1 **HW 6 DUE 9:00**	***WEEK 9***
JUN	4	5 **Time Series** Stationary stochastic processes **Hayashi:** 6.1-.2 **Greene:** 20 **Ruud:** 25	6	7 **HW 7 DUE: 9:00** **Time Series** Spurious regressions, cointegration **Hayashi:** 9.1-9.2 **Greene:** 21 **Ruud:** 25	8	***WEEK 10***
JUN	11 **FINAL EXAM 1:00-3:00**					