

**Course Program (Updated 16/5/16)**

**1. Generalized method of moments (GMM)**

*AR Appendix A and B. Other refs.: CT ch. 6, W ch. 8*

Moment problems and generalized moment problems. IV and 2SLS in the GMM framework. Optimal weighting matrix. Optimal instruments.

**2. Panel data methods**

*AR ch. 2, 3, 4, 6 and 7. Other refs.: CT ch. 21, 22. W ch. 10,11.*

Fixed effects models. Random effects and Hausman test. Measurement error in panels. Dynamic panels and internal instruments. Predetermined variables.

**3. Standard errors topics: clustering and bootstrap**

*CM. AP ch. 8. CT ch. 11*

Clustered data and standard errors. Two-way clustering and panel data. Few clusters. Bootstrap and bootstrapped s.e.

**4. Discrete choice models and maximum likelihood**

*Train*

Maximum likelihood estimation. Probit and Logit models.

**5. Duration analysis**

Duration data. Likelihood with censored and non censored durations. Estimation.

**Bibliography**

1. **AR: M. Arellano**, *Panel Data Econometrics* (Oxford University Press, 2003).
2. **CT : C. Cameron and P. Trivedi**, *Microeconometrics* (Cambridge University Press, 2005)
3. **W: J. Wooldridge**, *Econometric Analysis of Cross Section and Panel Data* (MIT Press 2nd ed. 2010)
4. **Train: K. Train**, *Discrete choice methods with simulation* (Cambridge University Press 2nd ed.)
5. **CM: C. Cameron and D. Miller**, *A Practitioner's Guide to Cluster-Robust Inference* (J. of Human Resources 2015).

6. **AP: J. Angrist and J.S. Pischke**, *Mostly Harmless Econometrics* ( Princeton University Press, 2008).