

**ECONOMICS 220D**  
**Intermediate Econometrics**  
**Fall 2010**

**Professor:** Hal White  
Economics Building, Room 309, Phone 43502  
Office Hours: TBA  
Class Web Page: TBA

**Course Readings:**

“An Extended Class of Instrumental Variables for the Estimation of Causal Effects,”  
White and Chalak (WC)  
*Asymptotic Theory for Econometricians* (ATE)

**Course Requirements:**

3-4 Homework Assignments; Midterm Exam (take home) due in class November 4;  
Final Exam (take home) due December 10 by email to “drhalwhite@gmail.com”.  
Note: Midterm and Final exams answers are to be prepared in LaTeX.

**Lectures:**

1. Course Overview: WC Section 1
2. Causal Data Generating Systems: WC Section 2
3. Recovering Causal Effects via Extended Instrumental Variables (XIV): WC Section 3
4. Asymptotic Properties of XIV: WC Section 4
  - a. Consistency: WC Prop 4.1; ATE Chapters 2, 3
  - b. Asymptotic Normality: WC Prop 4.2; ATE Chapters 4, 5
5. Exogeneity and Exclusivity Restrictions: WC Section 5
6. Single XIV Methods: WC Section 6
  - a. Exogenous Causes, Exogenous Instruments: WC Sections 6.1, 6.2
  - b. Proxies for Unobserved Exogenous Instruments: WC Section 6.3
  - c. Conditioning Instruments: WC Section 6.4
  - d. Conditional Instruments: WC Sections 6.5, 6.6
7. Double XIV Methods: WC Section 7
  - a. Conditionally Exogenous Instruments Given Conditioning Instruments: WC Section 7.1
  - b. Conditionally Exogenous Causes and Instruments Given Conditioning Instruments: WC Section 7.2
  - c. Conditionally Exogenous Instruments Given Causes and Conditioning Instruments: WC Sections 7.3, 7.4
  - d. Review of XIV Methods: WC Sections 7.5, 8