

Economics7828

Spring2019

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Tentative Course Outline:

1. Linear Regression Models
 - a. Specification of regression models
 - b. Method of moments estimation
 - c. Geometry of vector spaces and OLS
 - d. The Frisch-Waugh-Lovell Theorem
 - e. Influential observations
2. Statistical Properties of Ordinary Least Squares
 - a. Unbiasedness
 - b. Consistency, asymptotic normality and efficiency
 - c. Residuals and error terms
 - d. Misspecification
 - e. Goodness of fit
3. Hypothesis Testing and Confidence Intervals
 - a. Exact tests in the classical linear model
 - b. Large sample tests
 - c. Exact and asymptotic confidence intervals and confidence regions
 - d. Heteroskedasticity-consistent covariance matrices
 - e. The delta method
4. Nonlinear Regression
 - a. Method of moments estimators for nonlinear models
 - b. Nonlinear least squares
 - c. The Gauss-Newton Regression
 - d. One-Step Estimation
 - e. Hypothesis testing
5. Generalized Least Squares
 - a. GLS and feasible GLS estimators
 - b. Heteroskedasticity
 - c. Autoregressive and moving average processes
 - d. Testing for serial correlation
 - e. Panel data models
6. Instrumental Variables Estimation
 - a. Instrumental variables
 - b. Statistical properties of IV estimators
 - c. Hypothesis testing
 - d. Testing overidentifying restrictions
 - e. DWH tests
 - f. IV estimation of nonlinear models

University Policies

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If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the Disability Services website. Contact Disability Services at 303-442-8671 or dsinfo@colorado.edu for further assistance. If you have a temporary medical condition or injury, see Temporary Medical Conditions under the Students tab on the Disability Services website.

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Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards are subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, expression, veteran status, political affiliation or political philosophy. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. For more information, see the policies on classroom violence and the Student Code of Conduct.

Honor Code

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery,