

ECON 333 Educational Goals

2 Analyze and Interpret economic data

2B Interpret statistical evidence and methodology

Introductory:

- Explain the LLN and CLT and their main implications (H)
- Calculate and interpret bias
- Construct and interpret a test of a single linear hypothesis
- Construct and interpret a test of multiple linear hypotheses
- Identify and use the properties of commonly-used parametric probability distributions
- Interpret other statistics from a linear regression analysis
- Interpret the coefficients of a linear regression
- Use regression results to form predictions

Developing:

- Calculate common statistics by hand from a small data set
- Calculate the expected value of a discrete random variable from its PDF
- Construct and interpret a t-test
- Distinguish between parameters and statistics/estimators
- Distinguish between population and sample
- Interpret other important univariate statistics (variance, standard deviation)
- Interpret confidence interval and sets
- Interpret measures of central tendency (mean, median, mode)
- Interpret the results of a hypothesis test
- Perform basic probability calculations
- Calculate and interpret conditional expectations
- Calculate variances and covariances of random variables
- Interpret important bivariate statistics (covariance, correlation)
- Interpret joint and conditional distributions

2C Conduct statistical and/or quantitative analysis using a computer

Introductory:

- Incorporate nonlinearities, interactions and dummy variables in a linear regression model
- Use a specialized statistical package (e.g., R, Stata) to read in simple data
- Use a specialized statistical package to estimate a linear regression model

Developing:

- Manage data and code

2D Relate causal inference, selection and endogeneity

Introductory:

- Distinguish between statistical and causal relationships
- Identify and explain possible sources of bias in a given analysis
- Use economics to identify the likely direction of bias in a given analysis

3 Critically assess economic arguments, assumptions, and evidence

3B Critically evaluate assumptions in economic/econometric models

Introductory:

- Assess the validity/plausibility of the key assumptions in an econometric model
- Identify the key statistical assumptions in a linear regression analysis

4 Use oral, written, and graphical methods to communicate economic insights

4B Present economic arguments by means of graphs, charts and tables

Introductory:

- Construct and interpret a bar chart
- Construct and interpret a table of regression results
- Construct and interpret a scatter plot with regression line

Developing:

- Construct and interpret a time series plot
- Construct and interpret a table of summary statistics