



## Course Outline

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Economics  
School of Business & Economics  
ECON 2330 - **3.00** - Academic  
Economics and Business Statistics 2

## Rationale

GET analysis has identified that this course meets the Critical Thinking & Investigation ILO criteria. See attached foci tool and notes under Educational Objectives/Outcomes.

## Calendar Description

Students study advanced statistical techniques and methods and their applications in business and economics. Topics include inferences about population variance, including hypothesis testing and confidence intervals; analysis of variance and experimental designs; simple and multiple regressions; time series analysis and forecasting. Students are required to apply statistical techniques using Excel and/or Minitab.

## Credits/Hours

**Course Has Variable Hours:** No

**Credits:** 3.00

**Lecture Hours:** 3.00

**Seminar Hours:** 0

**Lab Hours:** 0

**Other Hours:** 0

*Clarify:*

**Total Hours:** 3.00

**Delivery Methods:** (Face to Face)

**Impact on Courses/Programs/Departments:** None

**Repeat Types:** A - Once for credit (default)

**Grading Methods:** (S - Academic, Career Tech, UPrep)

## Educational Objectives/Outcomes

1. Demonstrate a sound knowledge and understanding of hypotheses testing.
2. Conduct an analysis of variance under various experimental designs.
3. Estimate simple and multiple regression models and interpret the results.
4. Use time series analysis and forecasting models to make better forecasts.
5. Use non-parametric methods to make statistical inferences.

6. Apply statistical techniques to various fields such as marketing, supply chain management, finance, accounting, and economics using real-world data.
7. Demonstrate the ability to use Excel® and Minitab® in estimating applied statistical procedures, methods, and models.
8. This course meets the Critical Thinking & Investigation ILO criteria. See attached foci tool demonstrating the match.

## Prerequisites

ECON 1220-Introduction to Basic Economics  
or  
ECON 1900-Principles of Microeconomics  
and  
ECON 1950-Principles of Macroeconomics  
ECON 2320-Economic and Business Statistics 1  
or equivalent

MIST 2610

## Co-Requisites

## Recommended Requisites

## Exclusion Requisites

Students cannot receive credit for more than one of BUEC 2330, BUEC 3101, BUEC 3330, ECON 2331, ECON 3330 and STAT 2410

## Texts/Materials

### Textbooks

1. **Required** Anderson, Sweeney, Williams, Camm, and Cochran. *Statistics for Business and Economics*, 13th ed. South-Western, 2016

## Student Evaluation

The Course grade is based on the following course evaluations.

Participation 0-20% (0.00%) Assignments/quizzes 0-20% (0.00%) Project 0-25% (0.00%) Midterm(s) 30-60% (0.00%) Final exam 30-50% (0.00%)

## Course Topics

1. Hypothesis Tests and Statistical Inferences

- Developing null and alternative hypotheses
  - Type I Error
  - One and two population(s) mean: :  $\sigma$  known
  - One and two population(s) mean: :  $\sigma$  unknown
  - One and two population(s) proportions
2. Inference About Population Variance
- Inferences about a population variance
  - Inferences about two population variances
  - Selected nonparametric test of hypothesis
3. Comparing Multiple Proportions for Three or More Populations, Test of Independence
- A multiple comparison procedures
  - Test of independence
  - Tests of goodness of fit
4. Analysis of Variance and Experimental Designs
- Concept of ANOVA
  - Comparison of several population means
  - Completely randomized design
  - Randomized block design
  - Factorial experiment
5. Regression Models
- Simple linear and multiple regression models and regression equations
  - Least square method
  - Simple and multiple regression model assumptions
  - Coefficient of determination
  - Testing for significance
  - Confidence and prediction intervals
  - Categorical independent variables and interpreting the parameters
  - Interaction
- Determining when to add or delete variables
6. Time Series Analysis and Forecasting
- Time series patterns
  - Forecast accuracy
  - Moving average and exponential smoothing
  - Trend projection
  - Seasonality and trend
- Time series decomposition

## **Methods for Prior Learning Assessment and Recognition**

As per TRU Policy

### **Last Action Taken**

Implement by Submission Preview Subcommittee Chair Shelley Church