

THE UNIVERSITY OF THE WEST INDIES, MONA

ECON2009

Statistical Methods II (ECON2009)

Semester II, 2020-2021

Pre-requisites: ECON2008 Statistical Methods I

Anti-Requisites: M25B, M31D, SY22G

Lecturer: **Dr Andre Haughton** (Andre.haughton02@uwimona.edu.jm)

Office Hours: Wednesdays & Thursday's (10 – 11)

Description

This is a statistics course which introduces the student to Estimation, Regression and ANOVA. It explores methods that can be used to analyze both cross-sectional and time series data. It introduces the student to the simple as well as multivariate linear regression models. It also discusses issues that arise when dealing with time series data.

Learning Outcomes

At the end of the course students should be able to:

1. Define estimation
2. Distinguish between an estimator and an estimate
3. List, explain and demonstrate the properties of estimators
4. Explain, illustrate and apply the linear regression model
5. Use the linear regression model to conduct statistical inference
6. Analyze data from different populations using ANOVA
7. Explain and illustrate experimental design
8. Distinguish between time series and cross-sectional data
9. State and explain the components of time series data
10. Explain and illustrate smoothing techniques
11. State and interpret the autoregressive model
12. Explain and apply the Box-Jenkins Methodology

Modes of Delivery

Two hours of lecture and one hour tutorial per week.

Assessment

Final Exam 60%

Mid-term Exam 25%

Assignments 15%

Syllabus

1. Estimation

1.1 Introduction

1.2 Properties of Estimators

Readings: Newbold, Carlson and Thorne chapter 8

2. Regression Analysis

2.1 Introduction to Regression Analysis

2.2 The Simple Linear Regression Model

2.3 The Multiple Linear Regression Model

Readings: Newbold, Carlson and Thorne chapters 12 and 13

3. Analysis of Variance

3.1 Introduction

3.2 One-Way Analysis of Variance

3.3 Two-Way Analysis of Variance

3.4 Experimental Design

Readings: Newbold, Carlson and Thorne chapter 17

4. Time Series Analysis

4.1 Introduction

4.2 Components of Time Series Data

4.2 Smoothing Methods

4.3 Box-Jenkins Methodology

Readings: Newbold, Carlson and Thorne chapter 19

Resources

Required Text: Newbold, Paul Carlson, William L. and Thorne, Betty, **Statistics for Business and Economics**, Pearson Prentice Hall, 6th edition, 2007.

Highly Recommended Text: McClave, James T., Benson, P. George, Sincich, Terry, **Statistics for Business and Economics**, Prentice Hall