THE UNIVERSITY OF THE WEST INDIES – MONA CAMPUS
DEPARTMENT OF ECONOMICS

ECON3040: Nonparametric Statistics

Academic Year: Semester II - 2020/2021
Pre-requisite: ECON2016 or MATH2431, ECON2009 or STAT3001
Lecturer: Romae Muschette
Lecture: Wednesdays 10:00am - 12:00pm
Email: romae.finegan@uwimona.edu.jm
Office Hours: Tuesdays 2:00pm – 4:00pm (via Blackboard Collaborate)

Course Description
This module focuses on the theory and methods of making statistical inference based on nonparametric techniques. Nonparametric models have become an important part of statistical science because such models can provide more reliable statistical inferences than parametric models. When compared to parametric models which make stricter assumptions that are often violated by real data, nonparametric models are more flexible, that is, make less-strict assumptions that are less-frequently violated by data.

Learning Outcome
After taking this course the student should be able to:
   i.   Determine the need for the use of nonparametric techniques.
   ii.   Choose the appropriate nonparametric technique to make inference.
   iii. Correctly use the different nonparametric methods available.

Modes of Delivery
Two lecture hours and one tutorial hour per week via Blackboard Collaborate.

Syllabus
This course is divided into four (4) units as follows:

Unit 1: Introduction
- Types of Data
- Scales of Measurement
- Definition of Nonparametric Statistics / Methods
- Advantages and Disadvantages of using Nonparametric Methods
- When to use Nonparametric Methods

Unit 2: Test Based on the Binomial Distribution
- Binomial Test
- The Sign Test
- Paired sample Sign Test
- McNemar Test
- Test for trends

Unit 3: Tests Based on Contingency Tables
- 2 x 2 Contingency tables (Fisher's Exact Test)
- r x c Contingency Tables:
- The Median Test
- Measures of Dependence
- The Chi-Square Goodness-of-Fit Test

Unit 4: Test Based on Ranks
- Wilcoxon Signed-rank test
- Mann-Whitney
- Kruskal-Wallis
- Spearman Rank Correlation

Assessment

Mode of Assessment	Format	Weight
Mid-Semester exam	Take Home Exam	30%
Quiz	Multiple Choice Questions (via OurVLE)	10%
Tutorial Presentation	Presented during tutorial times - students can record a video prior to class time and submit for presentation OR they may choose to present live in class (in both cases student should be available to answer questions during the tutorial sessions)	10%
Final Exam	Take Home Exam	50%
Total		**100%**

Resources
Recommended Textbook:
- Conover, W. J., Practical Nonparametric Statistics, John Wiley & Sons, 1999

Other Details
Communication
If you need to contact me, please do so through the OurVLE platform.