ECO 204 (Sec - 6)
Statistics for Business and Economics - II

East West University

Fall 2023

Instructor: Shaikh Tanvir Hossain	**Schedule:**	Tuesday (C. Lab - Room 530):	1:30 - 3:00 PM
Email: tanvir.hossain@ewubd.edu		Thursday (Room 338):	1:30 - 3:00 PM

§. Office Hours:

Tuesdays 12.00 - 1.30 PM (Room - 345). Please try to come during this time!

§. Course Description:

This is a continuation of the course ECO104. The students will be introduced to **Inferential Statistics**, and the core topics are:

1. Point and Interval Estimation of Mean and Proportion (one sample and two sample problems)
2. Hypothesis Testing of Mean and Proportion (one sample and two sample problems)
3. Simple and Multiple Linear Regression Model, Estimation and Testing.
4. Basic Time Series Analysis
5. Goodness of fit test and some non-parametric tests (e.g., sign test and rank test), if time permits!
6. Analysis of Variance Techniques.

The course follows a balanced approach between theory and practice. Students will learn the concepts and also apply them using Microsoft Excel or R. There will be a lab project to evaluate the applied skills.

§. Course Learning Outcomes:

At the end of the course, the students will have the key ideas related to,

- parametric probability distributions,
- estimation and hypothesis testing,
- regression and nonparametric test
- time series analysis, and
- analysis of variance techniques (one way and two way).

§. Prerequisite Courses:

ECO101 and ECO104 offered at the East West University.

§. Textbooks / Notes:

There will be lecture notes (typed), and you should definitely read that first. In addition, I recommend to use any of the following books for exercises and practice problems.

1. Anderson, Sweeney, Williams, Camm, Cochran, Fry and Ohlmann (2020)
2. Newbold, Carlson and Thorne (2020)

Following books are a bit advanced at this level, but nevertheless these are also excellent references. In particular if you are an Economics students, you should look into Wooldridge (2019).

- DeGroot and Schervish (2012)
- Casella and Berger (2002)
- Wooldridge (2019)

§. Marks Distribution

Problem Sets	5%
Quizzes	15%
Lab Project	10%
Midterm - 1	20%
Midterm - 2	20%
Final	30%

- **Problem Sets:** Usually there will be a problem set in every two weeks, and it has to be turned in with your attempted solutions by the following week. Please form groups of maximum 3 and submit in groups. DO the problem set seriously!

- **Quizzes:** In total there will be 6 *random* quizzes (i.e., they can happen any day during the whole semester!) I will take the average of best 3.

- **Lab Project:** Lastly, there will be a Lab Project. We will talk about the details later in class.

§. Grading Scheme:

Numerical Scores	Letter Grade	Grade Point
80% and above	$A+$	4.00
75% to less than 80%	A	3.75
70% to less than 75%	$A-$	3.50
65% to less than 70%	$B+$	3.25
60% to less than 65%	B	3.00
55% to less than 60%	$B-$	2.75
50% to less than 55%	$C+$	2.50
45% to less than 50%	C	2.25
40% to less than 45%	D	2.00
Less than 40%	F	0.00

§. What I expect:

Please try to be punctual at class. Regular attendance is important. If your attendance $< 75\%$, you won't be allowed to sit for the final. You are expected to maintain Academic Honesty. *academic honesty* means - you should perform all academic activities without any form cheating, lying, stealing, plagiarism, receiving unauthorized assistance or using any source of information that is prohibited to use.

§. References:

Anderson, D. R., Sweeney, D. J., Williams, T. A., Camm, J. D., Cochran, J. J., Fry, M. J. and Ohlmann, J. W. (2020), *Statistics for Business and Economics*, 14th edn, Cengage, Boston, MA.

Casella, G. and Berger, R. L. (2002), *Statistical Inference*, 2nd edn, Thomson Learning, Australia ; Pacific Grove, CA.

DeGroot, M. H. and Schervish, M. J. (2012), *Probability and Statistics*, 4th edn, Addison-Wesley, Boston.

Newbold, P., Carlson, W. L. and Thorne, B. M. (2020), *Statistics for Business and Economics*, 9th edn, Pearson, Harlow, England.

Wooldridge, J. M. (2019), *Introductory econometrics: A modern approach*, 7th edn, Cengage learning.