Syllabus/ Course Outline Template

This template has been made in keeping with the HEC and FCCU policies

Course Name: STATISTICS FOR ECONOMISTS SP2023		
Course Code: ECON 203	**Course Type (Core course for major)**	**Course Credits: 03**
Class Timings: 1000-1050 hrs. **Mon/Wed/Fridays**	**Section: A** **Room: E204**	**Office Hours:** **1000 – 1130 hrs. (M,W)**
Instructor Name: DR ABDUL JALIL KHAN		

A Note from the Instructor:
Dear Students, you are welcome in this new semester for exploring new horizons of learning and skill development. I am here to guide you regarding the way you can improve your understanding about this course. As I love to teach and enjoy getting and share new knowledge. I believe that each student has the caliber to learn and grow, hence my perspective of successful learning is to help every student in exploring his/her own potentials for growth. This course is not only add the value in your previous stock of knowledge but will also enhance your mental capabilities to understand the real life phenomenon.

Instructor Contact Details
Email:
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Course Description:
Pre-requisites if any: NONE
This course is designed to introduce the students with basic concepts of Statistics and their application in Economics. The course focuses on measures of central tendency and variability, basic concepts in probability and probability distributions, sampling and sampling distributions, hypothesis testing, regression, and correlation analysis. After the completion of course students will be able to apply statistical techniques to analyze real life economic problems.
Mode of Instruction: FACE TO FACE
Mode of peer-to-peer Contact Among Students: **VIA WHATSAPP**

Lab Resources : INTRODUCTION OF SOFTWARES APPLICATIONS: MS EXCEL & Python

Program Objectives Addressed:

1. Demonstrate understanding of microeconomics, macroeconomics and econometrics
2. ***Perform quantitative research skills to critically analyze economic issues***
3. ***Apply economic theory in wide range of real-life problems and suggest policy chan***ges
4. Effective communicate economic ideas in oral and written form
5. ***Use their knowledge and abilities for the welfare of the people***
6. Practice ethical and moral values in their professional and personal lives
7. Describe careers that apply economics in public, private, and international institutions.

Course Objectives/By the end of the course students will be able to:

1. *To understand and differentiate between scales of measurement and variables.*
2. *Calculate and interpret different statistical concepts like measures of central tendency, dispersion, index numbers, regression, and correlation.*
3. *Learn how to use Software's to estimate different statistical concepts*
4. *Present data through graphs and contingency tables.*
5. *Collect, organize, analyze, and interpret the data in a useful and informative manner.*
6. *To apply statistical techniques for the purpose of testing hypotheses, estimating, and forecasting economic variables.*

Students will be able to

7. *Understand the various statistical concepts*
8. *Comprehend the relationship between statistics and economics*
9. *Apply software to generate solutions for problems in hand*
10. *Analyze data within economic sense to generate suggestions for policy design.*

Course contents, Learning Material & Activities Schedule

The schedule is tentative because it is not possible to anticipate exactly how much time each topic will require. Pl check out the online resources and alternate options for instructional tasks linked below. The schedule format will change for Blended classrooms.

Wk	Lec-ture No.	Course Objectives/ Student Learning Outcomes (SLOs)	Topic Title	Instructional Material (OERs) & Relevant Technology	Assessment & Rubrics	Teaching-Learning Activities
0		After successful completion of the module, student will be able to:	**Title:**	**Reading**	**Writing Assignment**	**Discussion/ Group Project/ Presentation**
1	1	1.To understand and differentiate between scales of measurement and variables.	**Nature and Scope of Statistics**	Lind – Chapters: 1 – 4		
	2		**Types of variables. Data its type and organization.**	Lind – Chapters: 1 – 4	Variable specification	
2	3	1.To understand and differentiate between scales of measurement and variables.	**Level of measurements.**	Lind – Chapters: 1 – 4	Scale of measurement	Discussion
	4		**Measures of central tendency. Mean Median and Mode**	Lind – Chapters: 1 – 4		
3	5	2.Calculate and interpret different statistical concepts like measures of central tendency, dispersion, index numbers, regression, and correlation.	**Measures of locality: Quartile, Deciles, and Percentile.**	Lind – Chapters: 1 – 4		
	6		**Measures of Dispersion, Standard deviation, variance, and their interpretations**	Lind – Chapters: 1 – 4		
4	7	2.Calculate and interpret different statistical concepts like measures of central tendency, dispersion, index numbers, regression, and correlation.	**Chebyshev's theorem and Empirical rule and their application in statistics**	Lind – Chapters: 1 – 4	Normal distribution	
	8		**Measures of Skewness and their interpretation.**	Lind – Chapters: 1 – 4		Discussion
5	9	2.Calculate and interpret different statistical concepts like measures of central tendency, dispersion, index numbers, regression, and correlation	**Application of Descriptive statistics**	Lind – Chapters: 1 – 4		
	10		**Cross Tabulation, analysis, and interpretations.**	Lind – Chapters: 1 – 4		Excercise
6	11	5.Collect, organize, analyze, and interpret the data in a useful and informative manner.	**Concept of a Sampling Distribution, Sampling method**	Lind – Chapter: 8 – 9	Survey	Project to conduct survey
	12		**Sampling distribution of sample mean with large sample and small sample Trade-off between Error and sample size**	Lind – Chapter: 8 – 9		
7	13	4.Present data through graphs and contingency tables	**Central limit theorem**	Lind – Chapter: 8 – 9		
	14		**Basic Concepts of Probability**	Lind – Chapters: 5, 6, 7	Probability	Discussion
8	15	4.Present data through graphs and contingency tables	**Basic theorems and laws of Probability**	Lind – Chapters: 5, 6, 7		

	16		**Probability distributions, standard error, confidence interval and concepts of statistical significance**	Lind – Chapters: 5, 6, 7	Probability Distribution	
MIDTERM EXAM						
9	17	6.To apply statistical techniques for the purpose of testing hypotheses, estimating, and forecasting economic variables.	**Calculation of z-scores, Testing the difference between means, the t-test. The paired sampled t-test.**	Lind – Chapters: 10 &11	Hypothesis testing	
	18		**Fundamentals of Hypothesis Testing. Test of Hypothesis (one-sample): procedure, one and two tailed tests of hypothesis**	Lind – Chapters: 10 & 11		
10	19	6.To apply statistical techniques for the purpose of testing hypotheses, estimating, and forecasting economic variables.	**Difference of mean/standard deviation between population and sample, Type –I &II errors**	Lind – Chapters: 10 & 11		
	20		**Correlation Analysis. Types of correlation and their specific applications**	Lind – Chapters: 13 – 14		Presentation
11	21	2.Calculate and interpret different statistical concepts like measures of central tendency, dispersion, index numbers, regression, and correlation	**Regression vs. correlation, correlation vs. determination of correlation**	Lind – Chapters: 13 – 14	Regression Analysis	Presentation
	22		**Simple linear and multiple regression analysis**	Lind – Chapters: 13 – 14		Presentation
12	23	3.Learn how to use Software's to estimate different statistical	**Assumptions / Limitation of multiple regression analysis**	Lind – Chapters: 13 – 14		Discussion
	24		**Multiple linear regression analysis in economics**	Lind – Chapters: 13 – 14		
13	25	3.Learn how to use Software's to estimate different statistical	**Nonparametric methods: chi-square application (optional)**	Lind – Chapters: 17 – 18		
	26		**Characteristics of chi square distribution (optional)**	Lind – Chapters: 17 – 18		
14	27	3.Learn how to use Software's to estimate different statistical	**Test of hypothesis using chi square method and Wilcoxon tests (optional)**	Lind – Chapters: 17 – 18		
	28		**Revision**			
15	**CULMINATING PROJECT**					

Score	BASIC ASSESSMENT RUBRICS*		
5	Thoughtfully analyzes and evaluates major alternative points of view. Justifies key results and procedures, explains assumptions and reasons. conceptually clear and strongly build argument by using concepts	A	**Go beyond learning objectives.**
4	Accurately interprets evidence, statements, graphics, questions, etc. Identifies relevant arguments (reasons and claims) pros and cons. Fair-mindedly follows where evidence and reasons lead conceptually clear but build weak argument by using concepts	B	**Completely meet the learning objectives**
3	Offers analyses and evaluations of obvious alternative points of view. Draws warranted non-fallacious conclusions. Justifies some results or procedures, explains reasons.	C	**Partially meet the learning objectives**
2	Justifies few results or procedures, seldom explains reasons Offers biased interpretations of evidence, statements, graphics, questions, information. Conceptually poor and distracted	D	**Poorly meet the learning objectives**
1	Fails to identify or hastily dismisses strong, relevant counter-arguments. Fails to comprehend the concept Argues using fallacious or irrelevant reasons, and unwarranted claims Does not justify results or procedures, nor explain reasons	F	**Unable to meet most of the learning objectives**
Class participation including attendance (10 marks); Assignments/Quizzes (30 marks) Midterm Exam (25 marks); Final Exam (35 marks)			

Note:

- Assessments can be divided into formative and summative:
  - Formative:
    - How will students learn the information (e.g., readings, lesson notes, mini-lectures, videos, and guidance/support you will provide (e.g., study guides, lectures, videos, example papers, etc.)?
    - How will students practice what they learn (e.g., non-graded quizzes, discussions, worksheets, activities, etc.)?
  - Summative:
    - How mastery of the objectives will be assessed (e.g., quiz, asynchronous discussion, case study, research paper, journal, etc.)

Out-of-Class Study Required:

- Do practice questions as many as possible
- Do hands on exercises of the software suggested
- Submit all practice exercise

Textbooks, Materials, Supplies, and other Resources

ESSENTIAL READINGS

- Douglas A. Lind, William G. Marchal & Samuel A. Wathen, (2015) STATISTICAL TECHNIQUES IN BUSINESS AND ECONOMICS, McGraw-Hill Companies, Latest Edition

Additional Readings

- Heumann, Christian. & Schomaker, Michael. S. (2016) INTRODUCTION TO STATISTICS AND DATA ANALYSIS with Exercises, Solutions and Applications in R (ed.) Springer International Publishing Switzerland.

Course Requirements:

Describe each graded component in enough detail that students will have a general understanding of the amount of and type of work required. Include information about the assignment's purpose and rubric for assessment where appropriate for assessment.

Class Participation

Hands on activities evaluated on the basis of quick and accurate response.

Assignment 1 & 2

Tests & Quizzes

Upload on Moodle/Google forms/WhatsApp

Assigned Readings

Topics of texts will be shared in the classes as well on WhatsApp with the requirements.

Grade Determination & Course Assessment as per FCC Policy:

- *Each student can compete for 'A' grade; however, grades will be assigned on the basis of given requirements:*
- *Late of delayed submission, attempting missed quizzes or missed exams will cause loss of at least one scale grade.*

Grading Legend

Below is the grading legend of FCCU (published in all catalogues and available on the FCCU website) as approved by the Academic Council

Grades	Quality Points	Numerical Value	Meaning
A	4.00	93-100	Superior
A-	3.70	90-92	
B+	3.30	87-89	Good
B	3.00	83-86	
B-	2.70	80-82	
C+	2.30	77-79	Satisfactory
C	2.00	73-76	
C-	1.70	70-72	
D+	1.30	67-69	Passing
D	1.00	60-66	
F	0.00	59 or below	Failing
NS	0.00	0.00	Did not show up in class
W	-	-	Officially Withdrawn
AW	-	-	Administrative Withdrawal/Dismissal
AU	-	-	Audit/Listener Status
I	-	-	Incomplete
T	-	-	Transferred credit

The entire course is worth 100%, the breakup is as follows (for example):

Missed Assignments/Make-Ups/Extra Credit

- No marks will be given in any assignment or quiz if missed however in case of valid reason only once an opportunity will be given to submit/attempt late (but must be within 15 days of missed activity)

Attendance Policy:

-Activities and class participation will be considered for attendance purpose only. However, any student found absent frequently (or fail to participate in most of the class activities) will be awarded 'F' grade.

Classroom Participation:

All students are required to perform various activities shared during the class with description of assessment strategies/rubrics. Mostly activities will be based on practice exercises and analysis of understanding the concept

Student Conduct & Other Issues:

-Consider including ground rules for appropriate classroom interactions, as well as a clear statement of expectations that classroom interactions will remain civil, respectful, and supportive.

-If any student faces any issues or has any concerns regarding the classroom climate and interactions, please feel free to contact: gloriacaleb@fccollege.edu.pk

Changes to the Syllabus:

This syllabus was designed to convey course information and requirements as accurately as possible. It is important to note however that it **may** be subject to change during the course depending on the needs of the class and other situational factors. Such changes would be for your benefit and you will be notified of them as soon as possible.

Student Support Services

-Students can contact the Campus Counseling Center at 0331-444-1518 or ccc@fccollege.edu.pk.

-Writing Center

- Mercy Health Center

Other Useful Links:

-Sexual Harassment Policy

-Anti-Corruption Policy

-Academic integrity

- Plagiarism Policy

-Academic Calendar

I expect that you will strictly follow the core values of FCCU and put your entire efforts to learn as per the course requirements, attend classes, read the textbook(s)/other assigned reading material and do the assignments in the stipulated time period

Developed by CLT (2021)

Updated by Instructor on: January 30, 2023