



# THE FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE

*Department of Agricultural and Resource Economics*

## ARE 202: Agricultural Statistics & Field Experimentation

### COURSE PARTICULARS

**Course Code:** ARE 202

**Course Title:** Agricultural Statistics & Field Experimentation

**No. of Units:** 3

**Course Duration:** Three hours of interactive class per week for 15 weeks.

**Status:** Compulsory

**Prerequisite:** NIL

### COURSE INSTRUCTORS

**Mrs. S.F. Arifalo**

*Room 118C, 1<sup>st</sup> Floor, SAAT Building,  
Dept. of Agricultural & Resource Economics,  
Federal University of Technology, Akure, Nigeria.*

**Phone:** +2348054326977

**Email:** [sfarifalo@futa.edu.ng](mailto:sfarifalo@futa.edu.ng); [arifalofs@saatfuta.edu.ng](mailto:arifalofs@saatfuta.edu.ng)

and

**Mr. L.O. Oparinde**

*Room 118A, 1<sup>st</sup> Floor, SAAT Building,  
Dept. Of Agricultural & Resource Economics ,  
Federal University of Technology, Akure, Nigeria.*

**Phone:** +2348062317878

**Email:** [looparinde@futa.edu.ng](mailto:looparinde@futa.edu.ng)

### COURSE DESCRIPTION

This course is designed to provide students with knowledge of elements of statistics –Data collection, analysis and interpretations; Sampling techniques; Probability and non-probability sampling - Simple random sampling, stratified sampling, purposive sampling. Computations of arithmetic mean, mode, median, variance and standard deviation. Students will also be acquainted with the Elementary concept of probability, Rules of Probability, joint Probability, Conditional Probability, Discrete and Continuous Random Variables, Binomial probability distribution, Normal Distributions and Normal approximation for a binomial distribution; Correlation and Regression analyses; Statistical independence; Permutation and combination; Hypotheses testing. Tests of significance in agricultural research and experimentation design. Review of research methods, Research methodology.

### COURSE OBJECTIVES

The objectives of this course are to:

- develop students insight into essence of data collection and analysis to address important economic issues
- foster students with the theoretical understanding of how data are sampled in order to arrive at unbiased and robust summaries
- provide students with understanding of how sampled data can be used to make inferences about a given population

## COURSE LEARNING OUTCOMES / COMPETENCIES

Upon successful completion of this course, the student will be able to:

- organize, analyse, interpret and summarize data in a useful and informative way
- calculate the central tendency and dispersion and interpret the meaning
- analyse and interpret regression and correlation concept
- understand the usefulness of probability in decision making
- draw inferences about population from a sampled data

## GRADING SYSTEM FOR THE COURSE

This course will be graded as follows:

Assignments	10%
Test	20%
<u>Final Examination</u>	<u>70%</u>
<b><u>TOTAL</u></b>	<b><u>100%</u></b>

## GENERAL INSTRUCTIONS

**Attendance:** It is expected that every student will be in class for lectures and also participate in all the assignment. Attendance records will be kept and used to determine each person's qualification to sit for the final examination. In case of illness or other unavoidable cause of absence, the student must communicate as soon as possible with any of the instructors, indicating the reason for the absence.

**Academic Integrity:** Violations of academic integrity, including dishonesty in assignments, examinations, or other academic performances are prohibited. You are not allowed to make copies of another person's work and submit it as your own; that is plagiarism. All cases of academic dishonesty will be reported to the University Management for appropriate sanctions in accordance with the guidelines for handling students' misconduct as spelt out in the Students' Handbook.

**Assignments and Group Work:** Students are expected to submit assignments as scheduled. Failure to submit an assignment as at when due will earn you zero for that assignment. Only under extenuating circumstances, for which a student has notified any of the instructors in advance, will late submission of assignments be permitted.

**Code of Conduct in Lecture Rooms and Laboratories:** Students should turn off their cell phones during lectures. Students are prohibited from engaging in other activities (such as texting, watching videos, etc.) during lectures. Food and drinks are not permitted during lecture.

## READING LIST

<sup>4</sup>Gupta S.C. (2004). Fundamentals of Statistics. 6<sup>th</sup> Revised & Enlarged Edition. Himalaya Publishing House.

<sup>5</sup>Murray R.S and Larry J.S. (2007). Theory and Problems of Statistics. 4<sup>th</sup> Edition. Schaum's Outlines Series. McGraw - Hill

<sup>5</sup>Murray R.S., Schiller J. and Srinivasan R.A. (2000). Probability and Statistics 3<sup>rd</sup> Edition. Schaum's Outlines Series. McGraw - Hill

<sup>5</sup>Keller G. and Warrack B. (2003). Statistics for Management and Economics. 6<sup>th</sup> Edition. Thomson Brooks/Cole

### Legend

- 1- Available in the University Library
- 2- Available in Departmental/School Libraries
- 3- Available on the Internet.
- 4- Available as Personal Collection
- 5- Available in local bookshops.

## COURSE OUTLINE

Week	Topic	Remarks
1	Introduction to statistics <ul style="list-style-type: none"> <li>• definition of Statistics</li> <li>• types of statistics – Descriptive &amp; Inferential</li> </ul>	
2	Data Collection <ul style="list-style-type: none"> <li>• Type of data</li> <li>• Sources of data collection</li> <li>• Method of data collection</li> </ul>	
3 & 4	Organisation of data <ul style="list-style-type: none"> <li>• Frequency distribution</li> </ul> Presentation of data <ul style="list-style-type: none"> <li>• Diagrammatic &amp; Graphic Presentation</li> </ul>	
5 & 6	Measures of central tendency <ul style="list-style-type: none"> <li>• Arithmetic, Weighted, Harmonic &amp; Geometric Means</li> <li>• Median</li> <li>• Mode</li> </ul> Measures of dispersion <ul style="list-style-type: none"> <li>• Range</li> </ul>	

	<ul style="list-style-type: none"> <li>• Variance</li> <li>• Standard Deviation</li> <li>• Coefficient of Variation</li> </ul> Skewness & Kurtosis	
7 & 8	Correlation and Linear regression analysis Permutation and Combination Theory of probability	
		MID-SEMESTER TEST
9 & 10	Rules for computing probability <ul style="list-style-type: none"> <li>• Independent, dependent, mutually exclusive, Non-mutually exclusive, conditional probability</li> <li>• Discrete and continuous probability distributions</li> </ul> Theoretical distribution <ul style="list-style-type: none"> <li>• Binomial Distribution</li> <li>• Normal Distribution</li> </ul>	
11 & 12	Sampling Theory <ul style="list-style-type: none"> <li>• Population, sample, parameter &amp; statistic</li> <li>• Sampling methods</li> </ul> Theory of estimation and test of hypothesis	
13 & 14	Analysis of variance (ANOVA) and research designs	
		END OF SEMESTER TEST
15	REVISION	This is the week preceding the final examination. At this time, evaluation will be done to assess how far the students' expectations for the course have been met.