

Course Code	ADU3201/ ADU3218					
Level	03					
Course Title	Basic Statistics					
Credit value	02					
Core/Optional	core					
Prerequisites	Pass in G.C.E. Advanced Level Combined Mathematics / Higher Mathematics or Equivalent					
Hourly breakdown	Theory		Practical	Independent Learning	Assessment	Total
	15*2 = 30 hours	DS hours 4*3 =12 hours	—	15*3 = 45 hours Online learning = 11 hours	CA = 02 hours	100 hours
Course Aim/s.	The main aim of this course is to introduce basic concepts and tools for statistical analysis and provide competence on basic applications of these tools.					
POs addressed by course	<p>PO1: Knowledge: Explain the fundamental, principles and broader knowledge pertaining to the chosen science disciplines offered for the degree.</p> <p>PO2: Practical Knowledge and Application. Demonstrate the competency to use the knowledge and practical skills appropriately.</p> <p>PO3: Communication: Demonstrate the competency in communicating efficiently and effectively to present information, ideas and concepts to the scientific community as well as to the wider society.</p> <p>PO5: Creativity and Problem Solving: Identify and analyze problems using quantitative and/or qualitative approaches using scientific methodology to provide valid conclusions.</p> <p>PO7: Information and Communication Technology Literate: Demonstrate the competency of using Information and Communication Technology for numerical and statistical analysis, and in day to day applications.</p>					
Course Learning Outcomes (CLO)	<p>At the completion of this course student will be able to</p> <p>CLO1: classify random variables and data as qualitative or quantitative or as discrete or continuous or as nominal, interval, ordinal or ratio (PLO1, PLO2, PLO3)</p> <p>CLO2: demonstrate competence in selecting appropriate statistical tools taking into account the type of data and research purpose (PLO1, PLO2, PLO3, PLO5)</p> <p>CLO3: construct frequency tables, relative frequency tables, cumulative frequency tables, relative cumulative frequency tables where appropriate manually as well as using statistical software (PLO1, PLO2, PLO3, PLO5, PLO7)</p> <p>CLO4: effectively use graphical data summaries and where appropriate construct bar charts, frequency polygons, cumulative frequency plots, stem and leaf plots and box plots manually as well as using statistical software (PLO1, PLO2, PLO3, PLO5, PLO7)</p> <p>CLO5: choose appropriate numerical data summaries as a measure for the central tendency of the data, dispersion of the data and skewness of data distributions, calculate the values of chosen statistics manually as well as using software based on raw data, data summarized in ungrouped frequency tables and grouped frequency tables, interpret the results and report the findings (PLO1, PLO2, PLO3, PLO5, PLO7)</p> <p>CLO6: demonstrate the understanding of concepts of probability, basic rules of probability and apply them in appropriate contexts (PLO1, PLO2, PLO3)</p> <p>CLO7: identify exhaustive events, mutually exclusive events and independent events and demonstrate probability laws applicable for these events (PLO1, PLO2, PLO3)</p> <p>CLO9: calculate probabilities of events using Venn diagrams, tree diagrams and Bayes Theorem (PLO1, PLO2, PLO3, PLO5)</p> <p>CLO10: calculate probabilities based on probability mass functions for discrete data and compute the mean and variance of the distribution (PLO1, PLO2, PLO3)</p> <p>CLO11: calculate probabilities based on simple probability density functions for continuous data and compute mean and variance of the distribution (PLO1, PLO2, PLO3)</p>					
Content (Main topics, sub topics)	<p>Data and Data Summaries Introduction to the terminology, classifications of data, tabular data summaries, graphical summaries, measures of location, measures of dispersion</p> <p>Introduction to probability and its applications introduction to terminology, introduction to probability, permutations from all objects, permutations and combinations from selected objects, operators on events and graphical illustrations, rules of probabilities, mathematical expectation and variance</p>					
Teaching Learning methods (TL)	<p>Self-Learning/Independent learning of Self-study</p> <ul style="list-style-type: none"> ▪ Instructional Material (IL) ▪ Online Activities (OL) ▪ Reference Work (RF) <p>Compulsory contact sessions</p> <ul style="list-style-type: none"> ▪ Assessments (AS) and Feedback – MCQs (MCQ); Structured Essay (SEQ); Essay Questions (ES); Assignments (A) <p>Non-compulsory contact sessions</p> <ul style="list-style-type: none"> ▪ Day Schools (DS) 					

Assessment strategy	Overall Continuous Assessment Mark (OCAM): 40%	Final Assessment: 60. %
	Details: Continuous Assessment1 (CAT1): -1hr Continuous Assessment2 (CAT2): -1hr OCAM=60% Maximum (CAT1, CAT2) + 40% Minimum (CAT1, CAT2)	Final Evaluation -Theory :100 % (2 hrs)
Recommended Readings:	<ul style="list-style-type: none"> • Agarwal, B.L. (2006) <i>Basic_statistics</i>, New age International pvt limited. • Leabo, D.A.(1968) <i>Basic_statistics</i> . Richard D. Irwin, Inc., Homewood, Illinois 	