<table>
<tr><td>Course Code</td><td colspan="6">ADU5318</td></tr>
<tr><td>Level</td><td colspan="6">05</td></tr>
<tr><td>Course Title</td><td colspan="6">Bio Statistics</td></tr>
<tr><td>Credit Value</td><td colspan="6">3</td></tr>
<tr><td>Core/Optional</td><td colspan="6">Optional</td></tr>
<tr><td>Prerequisites</td><td colspan="6">None</td></tr>
<tr><td rowspan="2">Hourly Breakdown</td><td colspan="2">Theory</td><td>Practical hours</td><td>Independent Learning</td><td>Assessments</td><td>Total hours</td></tr>
<tr><td>25*2
= 50 hours</td><td>DS hours
4*3
=12 hours</td><td>—</td><td>25*3
= 75 hours

Online learning = 11 hours</td><td>CA = 02 hours</td><td>150 hours</td></tr>
<tr><td>Course Aim/s</td><td colspan="6">The aim of this course is to introduce some fundamental statistical designs used for data collection and provide competence on proposing a suitable design in simple settings and develop competence on using basic statistical tools for data analysis.</td></tr>
<tr><td>Programme Learning Outcomes (PLO) addressed by course</td><td colspan="6">PLO1: Knowledge: Explain the fundamental, principles and broader knowledge pertaining to the chosen science disciplines offered for the degree.
PLO2: Practical Knowledge and Application. Demonstrate the competency to use the knowledge and practical skills appropriately.
PLO3: 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.
PLO5: Creativity and Problem Solving: Identify and analyze problems using quantitative and/or qualitative approaches using scientific methodology to provide valid conclusions.
PLO7: 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.</td></tr>
<tr><td>Course Learning Outcomes (CLO)</td><td colspan="6">At the completion of this course student will be able to

CLO1: Introduce statistical concepts related to data collection with emphasis on possible sources of errors in studies (PLO1, PLO3)
CLO2: Introduce statistical classifications of studies as observational and experimental (PLO1, PLO3)
CLO3: Introduce fundamental sampling techniques for data collection in observational studies (PLO1, PLO3)
CLO4: Introduce simple experimental designs for data collection in experimental studies (PLO1, PLO3)
CLO5: Develop competency in statistically designing an observational study (PLO1, PLO2, PLO3, PLO5)
CLO6: Develop competency in statistically designing an experimental study (PLO1, PLO2, PLO3, PLO5)
CLO7: Develop competence in selecting appropriate statistical tools for summarizing the data taking into account the data type and research purpose and using statistical software to apply them (PLO1, PLO2, PLO3,PLO5,PLO7)
CLO8: Introduce statistical tools for making inference about populations based on count data summarized in tables (PLO1, PLO3)
CLO9: develop competency in making inference about the mean of a single population and comparison of the means of two populations based on observed data (PLO1,PLO3)</td></tr>
<tr><td>Content (Main topics, Sub topics)</td><td colspan="6">Data and Data collection
Introduction to the terminology, types of populations, sampling, sampling techniques, classifications of data, design of experiments
Descriptive Data summaries
classifications of data, tabular data summaries, graphical summaries, measures of location, measures of dispersion
Making inference about populations based on sampled data
statistical hypotheses, testing hypotheses on the mean of a population, analysis of count data</td></tr>
<tr><td>Teaching – Learning methods</td><td colspan="6">▪ Non-compulsory contact sessions
▪ Self-learning/independent learning with the support of printed course material and self assessment activities
▪ Online supplemental component.
▪ Continuous Assessments (CA)
▪ Final examination</td></tr>
<tr><td>Assessments Strategy:</td><td colspan="3">Overall Continuous Assessment Mark (OCAM): 40%</td><td colspan="3">Final Examination:60%</td></tr>
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	Two Continuous Assessment Tests (CAT): ▪ Open Book Test (OBT) – one hour ▪ No Book Test (NBT) – one hour Structure: Compulsory questions which are MCQs and/or structured and/or short questions/ or essay	▪ The final examination paper will be of two (02) hours duration. ▪ The paper consists of two parts: *Part A* and *Part B* ○ *Part A* consists of Multiple Choice Questions/ short questions/ structured essay questions/ essay questions and is compulsory. ○ *Part B* consists of five (05) essay type questions of which three (03) to be answered.
Recommended Readings	• Agarwal, B.L. (2006) *Basic statistics, New age International pvt limited.* • Leabo, D.A.(1968) *Basic statistics* . Richard D. Irwin, Inc., Homewood, Illinois • Montgomery, Douglas, C. (2012)*Design and analysis of experiments*. Wiley and Sons	