UNIVERSITY OF DELTA, AGBOR, NIGERIA
COMPUTING
INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)
B.Sc. Information and Communication Technology

UNIDEL-ICT 108: Introduction to Data Analysis (3 Units; Compulsory; LH 30; PH=45)

Senate-approved Relevance
The training of high-skilled graduates who are knowledgeable and are able to understand data statistically, analyze, and report their results to scientific community and other useful needs. This is in tandem with the mission and vision of University of Delta, Agbor, of producing students with demonstrable potentials and skills in analyzing and reporting data in the face of the merging trend of big data will benefit the immediate community of Delta state and Nigeria in general.

Overview
Data analysis and analytics are evolving disciplines. The collection, preparation, and review of large datasets are dared by data analysts. Every business, regardless of size, generates and collects data. This information may take the shape of client reviews, financial records, logistics, market research, and so on. There is an emerging publicity of big data, prediction, Artificial Intelligence, and modeling techniques. However, advanced techniques rest on fundamentals which can be applied in many job roles. This course quickly equips you with that foundation on charting your overall business intelligence strategy or performing analysis which will armed the students with basic tools and techniques analyze data. This course will enable students to address hurdles an organization face when dealing with data overload and suggests some possible solutions.

This course is designed to provide students with an understanding of the principles and strategies necessary at the beginning of any data analysis project. It provides foundational coverage of the reasoning, practical, and technical skills needed to ensure efficient data analysis. The course uses an applied approach using real world data and uses Microsoft Excel. This course is a good precursor to more detailed data analytic techniques especially for those who have not been exposed to data analysis. Students are empowered so that they can apply these data analysis techniques to their respective fields of studies.

Objectives
The objectives of this course are to: (i) Enter data in a suitable form for data analysis(ii) Manipulate data to produce information(iii)Use pivot tables in data analysis(iv)Produce various graphical plots to visualize data(v) Interpret descriptive statistics(vi). Report the results of simple descriptive data analysis (vii) Recognize inappropriate use or interpretation of statistics in other courses, in the media and in life in general and comment critically on the appropriateness of this use of statistics.

Learning Outcomes
On successful completion of this course, students will be able to: (i) apply correctly a variety of statistical techniques, both descriptive and inferential. (ii) Interpret, in plain language, the application and outcomes of statistical techniques. (iii) Interpret computer output and use it to solve problems. (iv) Recognize inappropriate use or interpretation of statistics in other courses, in the media and in life in general and comment critically on the appropriateness of this use of statistics. (v) Understand and know how to use statistics in real-world settings. (vi) Develop some

understanding of the limitations and misuse of statistical inference as well as the ethics of data analysis and statistics. (vii) Identify, locate, evaluate, collect, compile and responsibly (ethically, legally, socially, professionally, and securely) use data and associated materials from multiple sources relevant for Data Analytics

Course Contents

Data Preliminaries. Sampling Designs. Counting. Probability and Probability Distributions. Sampling Distributions. Estimation and Hypothesis Testing. Scatter Diagram. ANOVA and Chi-square. Imputation Techniques. Data Cleaning. Correlation and Regression. Manipulating Data. Visualizing Data. Basic Descriptive Statistics. Relationship between two variables. Data Analytics Overview. Importance of Data Analytics. Types of Data Analytics. Descriptive Analytics. Diagnostic Analytics. Predictive Analytics. Prescriptive Analytics., Benefits of Data Analytics. Data Visualization for Decision Making. Data Types. Measure Of central tendency. Measures of Dispersion. Graphical Techniques. Skewness & Kurtosis. Box Plot. Descriptive Stats. Sampling Funnel. Sampling Variation. Central Limit Theorem. Confidence interval

Minimum Academic Standard

NUC minimum academic standard requirements for facilities.