# DBI ADEPTI TRAINING OUTLINE

## (Advance Digital Empowerment Programme for Tertiary Institutions)

## The two modules available in the programme;

1.  **Digital Skills, Cybersecurity, and Emerging Technologies (DiSCET)**
2.  **Data Analysis and Visualisation using SPSS and Microsoft Power BI**

| Digital Skills, Cybersecurity, and Emerging Technologies (DiSCET) | |
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| **General Objectives:** <br> ▪ Understand and maximize the tools and features of Microsoft Office Applications. <br> ▪ Use Microsoft Office application to automate and simplify office and academic tasks. <br> ▪ Understand and apply cyber security measures. <br> ▪ Collaborate online using simple internet tools. <br> ▪ Understand and apply techniques for the application of the internet in supporting academic activities. <br> ▪ Know the essentials concepts and principles of Internet Governance and Internet of Things | |
| **SUMMARY OF DAILY MODULE CONTENTS** | |
| **Day 1:** <br> **ICT Fundamentals and Introduction to Cyber Security** | 1. Understand basic concepts in ICT <br> 2. Know the current trends and emerging technology in ICT. <br> 3. Understand the applications of ICT in diverse areas with a special focus on education and learning. <br> 4. Understand Information and Cyber Security. <br> 5. Know emerging cybersecurity threats, threat vectors, and actors. <br> 6. Understand the concepts of Social Engineering and how Social Engineering Attacks are perpetrated. <br> 7. Know ways of protecting yourself against cyber-attacks, data and information theft, and principles of strong passwords. |
| **Day 2** <br> **Word Processing using Microsoft Word 201X.** | 1. Understand the concept of word processing. <br> 2. Know the advantages of Word Processing. <br> 3. Apply document formatting and editing features. <br> 4. Apply document and report enhancement tools for academics such as; <br>   - Creating an automated table of content and figures. <br>   - Creating Index. <br>   - Using Comments and Track Changes. <br>   - Automatically generating references and citations. <br> 5. Using the mail merge features. |
| **Day 3** <br> **Spreadsheet Applications using Microsoft Excel 201X** | 1. Understanding the features and applications of Spreadsheets. <br> 2. Record organization and management using Spreadsheets. <br> 3. Formatting data in Spreadsheets <br> 4. Applying Filtering, Sorting, and Data Validation using Spreadsheet. <br> 5. Perform automated result computation and grade generation for students' records using Microsoft Excel. |

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| | 6. Perform basic data analyses and visualization using Microsoft Spreadsheet. |
| **Presentations using Microsoft PowerPoint 201x** | 1. Understand Microsoft PowerPoint and the presentation creation process.<br>2. Creating presentations for conferences, seminars, and learning purposes.<br>3. Applying transitions and animations to presentations in PowerPoint.<br>4. Saving Presentations in different formats. |
| **Day 4 Emerging Technology** | 1. Artificial Intelligence and its Application.<br>2. Applications of Blockchain Technology.<br>3. Cloud Computing in Education.<br>4. 4G/5G Applications<br>5. Using Google Forms and other Google Educational Tools |
| **Day 5 Internet and Online Collaboration** | 1. Understand the concepts of Internet Governance and its applications.<br>2. Know the applications of the Internet.<br>3. Know how to access open-source materials from Internet Repositories.<br>4. Know how to perform online collaborations using Internet tools.<br>5. Know how to use online tools that support and enhance learning |

# Data Analysis using SPSS and Power BI

**General Objectives**

- Understand the SPSS Data Analysis Environment.
- Know how to define variables and apply variable measures (ordinal, nominal scale, dependent, and independent variables)
- Know how to code questionnaires in SPSS.
- Perform Descriptive Statistics using SPSS.
- Perform test for normality in SPSS using Graphical and Statistical Methods.
- Choose the right Statistical Test for Data Analysis in SPSS.
- Perform Parametric and Non-Parametric Test in SPSS.
- Interpret SPSS test results.
- Analysis of research data using SPSS

## SUMMARY OF DAILY MODULE CONTENTS

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| **Day 1** | - Introduction to SPSS and Basic Concepts.<br>- Understanding the SPSS Environment and Data Entry in SPSS.<br>- Basic Operations in SPSS<br>- Understanding Data Types and Sorting and arranging Data.<br>- Creating and Coding Questionnaires in SPSS<br>- Level of Measurement in SPSS<br>- Likert Scales for Statistical Data Collection. |

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| **Day 2** | ▪ Measures of Central Tendency<br>▪ Measures of Dispersion<br>▪ Frequency Distribution and Analysis<br>▪ Percentiles and Z Score Analysis<br>▪ Cross Tabs and comparing values and means<br>▪ Creating Charts for Data Representation and Visualisation |
| **Day 3** | ▪ Normal Distribution Concepts.<br>▪ Parametric and Non-Parametric test.<br>▪ Data Transformation<br>▪ Testing for Normality<br>▪ Skewness and Kurtosis.<br>▪ Graphical and Statistical Methods of Testing for Normality.<br>▪ Identifying Outliers in Research Data.<br>▪ Hypothesis Testing<br>▪ Non-Normal Variable Transformation<br>▪ Univariate and Multivariate Outliers<br>▪ Setting Significant Values and Region of Rejection in SPSS.<br>▪ Statistical Significance and P-Values<br>▪ Choosing the Right Statistical test<br>▪ Comparison of Statistical Tests.<br>▪ Choosing the Right Statistics test and Model<br>▪ Correlation test for Parametric and Non-parametric Datasets<br>▪ Pearson, Spearman, Kendal Tau-B and Point Biseral Corelation Testing<br>▪ T-Test and Z-Test, Chi-Square<br>▪ Analysis of Variance (One Way, Two-Way, and Manova) and Levene Test.<br>▪ Post Hoc Test,<br>▪ Regression Analysis<br>▪ Man Whitney, Kruskal Wallis, Friedman, Wilcoxon Signed Rank Tests.<br>▪ Crombach Alpha test for Reliability<br>▪ Factorial Analysis, Levene test, F-Test<br>▪ Post-Hoc Analysis of Research Data<br>▪ Reporting SPSS Results in APA Style Format |
| **Day 3-4** | ▪ Data Analysis and Visualisation using Microsoft Power BI<br>▪ Data Manipulation in Power BI<br>▪ Data Cleaning and Transformation<br>▪ Corelation and Frequency Analysis<br>▪ Comparison Trend and Ranking Analysis |
| **Day 5** | ▪ Power Pivots and Power Queries<br>▪ Data Analysis Expressions (DAX)<br>▪ Power BI Reports |