INTERNATIONAL QUALIFICATIONS

AND ASSESSMENT CENTRE (IQAC)

«Approved»

2025 y. «16» iyul

Programme	**Level 3 International Foundation Year Diploma in Business (RQF)**		
Unit Number/ Unit Title	**Unit 4 NUMERACY AND DATA**		
Cohort Code:	L03NAD-U4		
Unit Level	3		
Total GLH	Total qualification time 200/ Total Guided learning hours 90/ Self-guided learning hours 110		
Credits	20 CATS/ 10 ECTS		
Lecturer			
Start Date		**End Date**	

Unit Aims	This unit aims to provide students with essential numeracy skills and a foundational understanding of data analysis within a business context. Students will develop the ability to interpret, analyse, and present quantitative information to support effective decision-making. The unit covers core mathematical and statistical concepts, including percentages, ratios, averages, data collection methods, and basic data visualization techniques. Emphasis is placed on applying these skills to real-world scenarios such as budgeting, forecasting, and interpreting business performance metrics. Students will also be introduced to the use of digital tools for data handling and gain insights into the role of data in evidence-based business practices. Through practical exercises, students will build confidence in working with numbers and data in professional environments.
Differentiation Strategies	The total number of students to be in the lesson is 13. This is a multicultural group of students predominantly are at the ages of 16-17, with numerous ethnic, gender, and creed background. These are level 3 students; hence it is assumed that they have practical, theoretical, or

(e.g. planned activities or support for individual learners according to their needs)	technological knowledge and understanding of a subject or field of work to find ways forward in broadly defined, complex contexts. These students must be able to generate information, evaluate, synthesise the use information from a variety of sources. Various approaches to addressing the various identified students needs will be adopted throughout the lesson. Such will include:- 1. Progressive tasks 2. Digital resources 3. Verbal support 4. Variable outcomes 5. Collaborative learning 6. Ongoing assessment 7. Flexible-pace learning
Equality & Diversity	Variety of teaching techniques will be employed to ensure that the needs of each individual learner are met.
Safeguarding & Prevent	Safeguarding policies and the Prevent duty are strictly observed to ensure the safety, well-being, and inclusivity of all students and staff.
Health & Safety	SIRM H&S policies will be maintained.
Learning Resources	**Teaching and Learning Materials** • "Basic Mathematics for College Students" by Alan S. Tussy and R. David Gustafson • "Mathematics: A Very Short Introduction" by Timothy Gower • "Statistics Essentials For Dummies" by Deborah J. Rumsey • Gillespie, A. (2015) Foundations of Economics. 3rd Edition, Oxford University Press Scott, P. (2018) Introduction to Accounting. Oxford University Press.

Learning Outcome	Assessment Criteria
LO1. Numerical Skills Development	1.1. Apply fundamental arithmetic operations (addition, subtraction, multiplication, division) accurately in various contexts. 1.2. Utilize mathematical concepts such as fractions, percentages, and decimals to solve numerical problems. 1.3. Interpret numerical data presented in tables, charts, and graphs
LO2. Data Analysis Proficiency	2.1. Collect and organize data effectively using appropriate methods. 2.2. Analyse data sets using statistical techniques including mean, median, mode, and range. 2.3. Interpret the results of data analysis and draw appropriate conclusions.
LO3. Problem-Solving Skills in Numerical Contexts	3.1. Identify and define mathematical problems relevant to reallife situations. 3.2. Apply problem-solving strategies to solve numerical problems independently. 3.3. Evaluate the efficiency and accuracy of problem-solving approaches.
LO4. Critical Thinking and Application of Numerical Concepts	4.1. Evaluate the validity and reliability of numerical information presented in various formats. 4.2. Apply mathematical concepts and reasoning to analyze and solve complex problems. 4.3. Communicate mathematical solutions effectively, both orally and in writing, demonstrating clarity and coherence.

No	Learning Outcome / Topic	Learning and Teaching Activities	Which assessment criteria does the session relate to?	Day/month/year/ signature
1.	Introduction to Numeracy and Data	• Define numeracy and its importance • Overview of data types • Discussion, syllabus review, and introduction to data sources	LO1	
2.	Basic Arithmetic and Algebra	• Review basic arithmetic operations and algebraic concepts • Problem-solving exercises, peer teaching	LO1	
3.	Introduction to Statistics	• Understand descriptive statistics (mean, median, mode) • Hands-on data collection and analysis	LO1	
4.	Data Visualization	• Learn about various data visualization techniques (charts, graphs) • Create visual representations of collected data	LO1	
5.	Practice	• Numeracy in Real Life: Students create a short list (or infographic) showing where they use numeracy skills in daily life (e.g., budgeting, cooking, time management). • Data Scavenger Hunt: In pairs or groups, students find and classify 5 examples of data types (categorical, ordinal, discrete, continuous) from online sources or around campus.	LO1	

		• Data Diary: Over one day, students track personal data (e.g., steps walked, hours slept, time on social media) and briefly discuss what that data tells them.		
6.	Probability Concepts	• Introduce basic probability and its applications • Simple probability exercises and games.	LO1	
7.	Distributions and Data Patterns	• Explore normal distribution and outliers. • Analyse datasets to identify patterns	LO1	
8.	Inferential Statistics	• Introduction to hypothesis testing and confidence intervals • Group projects on hypothesis formulation	LO2	
9.	Correlation and Regression	• Understand correlation and linear regression analysis • Calculate and interpret correlation coefficients	LO2	
10.	Practice	• Coin Toss Probability Exercise: Students flip a coin 20 times and record the outcomes (heads or tails). Using the data, calculate the probability of getting heads or tails and compare it to theoretical probability (50% for each). • Probability Bingo Game: Create a bingo-style game using probability questions. For example: “What is the probability of rolling a 4 on a die?” or “What is the probability of drawing a red card from a deck?” Students work through the problems to mark off squares and win the game. • Dice Rolling Simulation: In small groups, students roll two dice 50 times and calculate the probability of getting a sum greater than 10. Discuss the real-world applications of probability in games, insurance, and forecasting.	LO2	

11.	Review	• Review of LO1 topics: Introduction to Numeracy and Data, Basic Arithmetic and Algebra, Introduction to Statistics, Data Visualization, Probability Concepts, Distributions and Data Patterns, Inferential Statistics, Correlation and Regression, Practice questions and mock assessment	LO2	
12.	Qualitative vs. Quantitative Data	• Differences between qualitative and quantitative data • Case studies and classification exercises	LO2	
13.	Survey Design and Sampling Techniques	• Learn about effective survey design and sampling methods • Design a survey and identify target populations	LO2	
14.	Data Collection Methods	• Overview of primary and secondary data collection • Group discussions on data sources.	LO2	
15.	Introduction to Statistical Software	• Familiarize students with statistical software (e.g., Excel, R, SPSS) • Basic tutorials and exercises.	LO3	
16.	Practice	• Data Classification Exercise: Provide students with a list of data (e.g., customer feedback, product sales numbers, survey responses). Ask them to categorize each as either qualitative or quantitative data, explaining their reasoning. • Case Study Analysis: Give students a real-world case study where both qualitative and quantitative data are used (e.g., a market research report). Ask students to identify which parts of the case study use qualitative data and which use quantitative data, and discuss how each type contributes to the analysis.	LO3	

		• Data Conversion Task: Have students collect their own data on a topic of interest (e.g., favorite movies, daily commute time). They then classify this data as qualitative or quantitative and convert any qualitative data (e.g., open-ended survey responses) into quantitative data (e.g., through thematic coding or numerical ratings).		
17.	Midterm	• **Midterm assessment** covering all learning outcomes (theory and practical elements)	LO1, LO2, LO3	
18.	Feedback & Reflection	• Review of key concepts covered • Reflective discussion on personal growth in communication skills • Course evaluations	LO3	
19.	Advanced Data Visualization	• Create interactive visualizations using software tools • Projects using Tableau or similar tools.	LO3	
20.	Exploring Big Data	• Understand big data concepts and its implications • Case studies on big data applications.	LO3	
21.	Ethics in Data Handling	• Discuss ethical considerations in data collection and usage • Group debates on ethical dilemmas	LO3	
22.	Time Series Analysis / Experimental Design	• Learn about designing experiments and understanding variables • Group projects on designing an experiment • Learn about designing experiments and understanding variables • Group projects on designing an experiment	LO3	

23.	ANOVA (Analysis of Variance)	• Introduction to ANOVA and its applications • Hands-on ANOVA exercises	LO3	
24.	Data Interpretation Skills / Using Data for Decision Making	• Develop skills for interpreting and presenting data • Case study analysis and presentations • Explore how data drives decision-making in organizations. • Real-world case studies.	LO4	
25.	Advanced Statistical Techniques	• Introduction to multivariate analysis and logistic regression • Group projects applying advanced techniques.	LO4	
26.	Data Storytelling	• Learn how to communicate data insights effectively • Create a data-driven presentation	LO4	
27.	Industry Applications of Data	• Explore various industries' use of data analytics • Guest speakers from industry	LO4	
28.	Preparing for the Job Market	• Skills for data-related roles and career pathways • Resume building and interview preparation	LO4	
29.	Final Exam Preparation & Review			
30.	Final Exam			