### SESSION PLAN

**COURSE:** ABE Level 4 Introduction to Quantitative Methods

**ELEMENT:** Element 3 – Business Statistics

## **LEARNING OUTCOME 3**

**Discuss the process of gathering business and management data**

3.1 Explain main sources, types, and uses of data relevant for business and management information

3.2 Evaluate alternative methods of sampling and measurement scales used in context of business information

3.3 Classify and tabulate statistical data

**NUMBER OF SESSIONS:** Three – approx. 18 hours

**SESSION TOPICS:** Session 1: Data in statistics

Session 2: Sampling methods and measurement scales

Session 3: Classification and tabulation of data

**Note to tutors: This is the recommended session plan for Learning Outcome 3, Element 3 of the ABE Level 4 Introduction to Quantitative Methods. You should follow the plan, using the activities provided. It is important to enhance all sessions with local examples and case studies, involving the learners ACTIVELY wherever possible. Note that for this unit, the activities come from the study guide owing to the progressive nature of the teaching and the volume of activities available.**

### SESSION 1: Data in statistics (4 hours)

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| **Topic** | **Tutor Activity** | **Slides** | **Learner Activity** | **Formative Assessment** |
| Introduction to session and learning outcomes  | **3.1 Explain main sources, types, and uses of data relevant for business and management information**Use ‘4UIQM E3 Tutor Presentation’ PowerPoint Learners should be encouraged to actively participate in the discussions. Share meaningful interpretations from the findings of each group. Introduce the session and learning outcomes in light of the discussions. | 1-4 | In small groups, learners should discuss why they think they should study statistics and see if they could and also highlight any concerns they may have at this stage. Present their findings to the rest of the class  |  |
|  | Encourage learners to answer the following three questions: 1. What do they think is statistics?
2. What about data?
3. How is data related to statistics?

On the basis of the discussion try and explain the concept of statistics and also data. Show slide 5.  | 5 | The learners should actively participate in the discussion. |  |
| Statistical study | Show slide 6 to discuss the two branches of statistics. Next, show slides 7 and 8 to briefly describe how a statistical study is conducted.  | 6-8 |  |  |
| Data | Show slide 9 to define the term data. Give some examples.  | 9 | Activity 1- Ask learners to complete activity 1 collectively as a class. | E3 LO3 Activity 1 |
| Sources of data | Invite learners to identify various sources from which data can be collected. Make a list of all the sources identified.Based on the list compiled, explain the primary and secondary sources of data.Explain the difference between primary and secondary data.Explain questionnaires as a source of information. | 10-14 | Learners should actively participate in identifying sources of data.Learners complete activity 2. | E3 LO3 Activity 2 |
| Types of data | Invite learners to give examples of data. Make a list of all data identified.Based on the list compiled, explain the difference between qualitative and quantitative data. Thereafter, identify the difference between discrete and continuous quantitative data. Show slide 16. | 15-16 | Learners should actively participate in identifying examples of data. |  |
| Variables | Explain the difference between quantitative and qualitative variables using the example in the study guide. | 17 | Learners complete Activities 3, 4 and 5 in the class and discuss any queries they may have. | E3 LO3 Activity 3E3 LO3 Activity 4 E3 LO3 Activity 5 |
|  |  | Learners complete Activity 6 in pairs outside the class. | E3 LO3 Activity 6 |
| Use of data in business | Next show slide 18 and start a discussion on the use of data in the business.  | 18 | Learners should actively participate in the discussion. |  |

### SESSION 2: Sampling methods and measurement scales (6-8 hours)

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| **Topic** | **Tutor Activity** | **Slides** | **Learner Activity** | **Formative Assessment** |
| Population and sample | **3.2 Evaluate alternative methods of sampling and measurement scales used in context of business information**Use ‘4UIQM E3 Tutor Presentation’ PowerPoint Explain the concept of population and sample and the relation between the two. Use an example to illustrate.Discuss the reason for using a sample. | 19-20 |  |  |
| Sampling process | Show slide 21 and explain the various stages in the sampling process. Illustrate these stages by using an example.Use slides 22-23 to explain the factors that influence sample choices and also sample size.  | 21-23 | Learners complete activity 7. | E3 LO3 Activity 7 |
| Sampling approaches and techniques | Tell the learners about the three main sampling approaches or techniques. Next show slides 25 and 26 to explain the difference between random and non-random sampling techniques. | 24-26 |  |  |
| Random and non-random sampling techniques | Show slide 27 to list the various random and non-random sampling techniques.Next, use case study 2 to explain simple random sampling and systematic sampling techniques and the difference between the two. Using case study 2, next illustrate the process of stratified random sampling and cluster random sampling and the difference between the two. | 27-35 | Learner should complete Activity 8 individually  | E3 LO3 Activity 8 |
| Random and non-random sampling techniques | Discuss how non-random techniques are different from random sampling techniques.Describe the four non-random sampling techniques. | 36 |  |  |
| Sampling error and bias | Explain the concepts of sampling error and bias and how the two are related. Use examples to explain. | 37-38 |  |  |
| Measurement scales | Explain the difference between the four measurement scales using examples from the study text. | 39 | Learners complete activity 9 individually in the class. | E3 LO3 Activity 9 |

### SESSION 3: Classification and tabulation of data (6 hours)

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| **Topic** | **Tutor Activity** | **Slides** | **Learner Activity** | **Formative Assessment** |
| Classification and tabulation of data | **3.3 Classify and tabulate statistical data**Use ‘4UIQM E3 Tutor Presentation’ PowerPoint Make a list of all the reasons identified by the learners during their discussion.In light of the discussion show slide 46 to explain different types of classification. Use case study 1 from the study guide to demonstrate simple and complex classification resulting in simple and two-way tables. | 40-43 | Ask learners to identify the reasons or the need to classify and tabulate data.Learners complete activity 10 individually in the class. | E3 LO3 Activity 10 |
| Basic rules for a good table structure | Describe the basic rules for a good table structure. | 44 |  |  |
| Frequency distribution | Explain the concept of frequency.Use case study 1 to demonstrate simple frequency distribution table using tally marksNext illustrate how group distribution differs from simple frequency distribution.Finally, demonstrate cumulative frequency distribution and relative frequency distribution | 45-47 | Learners complete activities 11 and 12 individually in the class and discuss any queries they may have. | E3 LO3 Activity 11E3 LO3 Activity 12 |
| Project activity | Divide the class into groups of 6–7 students. Let one student be a researcher who will conduct a focus group interview on a chosen subject, for example, fast food eating or sports interests. The researcher should prepare a questionnaire that should contain:* one question for nominal level data measurement
* two questions for ordinal level data measurement
* two questions for interval level data measurement
* two questions for ratio level data measurement

The researcher should record the entire focus group discussion on a recording device, for example, a mobile phone. The focus group should start by noting the name and gender of each participant. Thereafter the researcher should direct the discussion on each question by giving each participant an equal chance to express his or her opinion. At the end of the discussion, the research should prepare a transcript (written version) of the entire recorded discussion. Using the written version, the researcher should record and classify relevant data against each question for each participant. The final report should be prepared as two-way and frequency distribution tables. The researcher should present this data to the class with the help of visual aids, such as acetate slides or a PowerPoint slideshow.  | 48 | Learners need to complete the project in groups of 5-6. | E3 LO3 Activity 13 |
| Review of session and learning outcomes  | Discuss the key points covered in the chapter and ask learners if they have any queries. | 49 |  |  |