CONDUCT SCIENTIFIC RESEARCH

UNIT CODE: 0111 551 14 A

TVET CDACC UNIT CODE: AGR/CU/AP/CC/07/6/MA

Relationship to Occupational Standards

This unit addresses the unit of competency: Conduct Scientific Research

Duration of Unit: 80 Hours

UNIT DESCRIPTION

This unit specifies the competencies required to conduct scientific research. It involves preparing scientific research proposal, carrying out laboratory research, analyzing the laboratory research findings and documenting and disseminating laboratory research findings.

Summary of Learning Outcomes

By the end of this unit, the learner should be able to:

S/No	Learning Outcomes	Duration (Hours)
1.	Prepare scientific research proposal	30
2.	Apply scientific research methods	20
3.	Analyze scientific research finding	30
Total		**80**

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods

1. Prepare scientific research proposal	1.1 Identification of scientific research problem 1.2 Development of research objectives 1.3 Designing research questions 1.4 Development of scientific research proposals as per	• Written assessment • Practical • Projects • Third party report • Portfolio of evidence • Oral questions
	standard research procedures	

2. Apply scientific research methods	2.1 Determining Scientific study design
	   2.1.1 Qualitative design
	   2.1.2 Quantitative design
	2.2 Determining of sample size
	2.3 Determine sampling techniques
	   2.3.1 Probability
	   2.3.2 Non probability
	2.4 Ethical considerations in research
	2.5 Identifying research materials
	2.6 Data collection
		• Written assessment
		• Practical
		• Projects
		• Third party report
		• Portfolio of evidence
		• Oral questions

3. Analyze scientific research finding	3.1 Identifying data analysis methods	• Written assessment
	2.6.1 ANOVA	• Practical
	2.6.2 Measures of central tendency	• Projects
		• Third party report
	2.6.3 Measures of dispersal	• Portfolio of evidence
	3.2 Perform data analysis	• Oral questions
	3.3 Prepare research report	

Suggested methods of delivery

- Practical

- Project

- Demonstration by trainer

- Practice by the trainee

- Group work and Discussions

- Direct instruction

Recommended Resources

	Material	Quantity	Ratio of use.
1.	Workstation	5	1:5
2.	Reporting tools	several	1:1
3	Data collection tools (ANOVA software)	5	1:5
4	Stationery		
5	Data analysis tools		
6	PPEs		individually
8	Text book resource for research		individually
9	Computer (MS word, excel and PowerPoint)		individually
10	Smart phones		individually
11	Internet	WIFI	1:25
12.	Whiteboards	1	1:25