



# **GWANDA STATE UNIVERSITY**

**FACULTY OF ENGINEERING AND ENVIRONMENT**

**DEPARTMENT OF GEOMATICS AND SURVEYING**

**RESEARCH METHODS FOR ENGINEERS**

**ESG 5105**

**Final Examination Paper**

**September 2024**

This examination paper consists of 2 pages

**Time Allowed: 3 hours**

**Total Marks: 100**

**Examiner's Name: Dr. L. Makwati**

## **INSTRUCTIONS**

**Answer four questions of your choice.**

### **Question 1**

Literature review is a life blood of any research. Validate this assertion (25)

### **Question 2**

Identify and explain five research tools that are used for data gathering in your field of study (25)

### **Question 3**

Make a comparison of the main characteristics, strength and weaknesses of qualitative and quantitative research methods. (25)

### **Question 4**

Distinguish between epistemological and ontological research (15)

Triangulation and validity are key components of research. Expand on this statement (10)

### **Question 5**

Formulate an interview guide and a questionnaire that seeks to address a land dispute. (25)

### **Question 6**

- i. Define what an 'aim' of study is. [4 marks]
- ii. Define the term 'hypothesis'. [2 marks]
- iii. What is meant by an 'alternative hypothesis'? [3 marks]
- iv. What is meant by an 'null hypothesis'. [3 marks]
- vi. Distinguish between an alternative and null hypothesis. [3 marks]
- vii. What is an 'independent variable support your answer with tenable examples'? [5 mark]
- viii. What is a 'dependent variable', give a plausible example? [5 mark]