GWANDA STATE UNIVERSITY

FACULTY OF ENGINEERING AND ENVIRONMENT

DEPARTMENT OF GEOMATICS AND SURVEYING

Environmental Design/Planning

ESG 2213

Final Examination Paper

June, 2026.

This examination paper consists of 3 pages

Time Allowed:	**3hours**
Total Marks:	**100**
Examiner's Name:	**Mr.TT CHIGOVA**

INSTRUCTIONS

1. Answer **ALL 4** questions
2. Each question carries **25** marks
3. A3 plain white bond paper is allowed
4. Use of calculators is permissible, but programmable calculators are not allowed in the exam.

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1)	With the aid of examples, discuss the following urban design principles/elements:	
	i) Green spaces vs Urban heat island	**(10)**
	ii) Permeability	**(5)**
	ii) Green infrastructure	**(10)**

2.	a)		Using your visual memory and understanding of campus environment and orientation, and also the help of your levelling practicals in **field survey modules**:	
		i.	Draw a sketch map, clearly showing the section of student residential area and the crucial utilities.	**(10)**
		ii.	On your sketch drawing, propose a storm water drainage layout indicating it clearly on the sketch map.	**(10)**
	b)	Using your environmental knowledge of the area, make recommendations to the types of drainages that can be constructed on the area you have drawn the sketch map.		**(5)**

3)	a) Many cities in the developing countries are facing safety and health issues, with reference to the city of your choice, examine how EIA; and Geomatics and Surveying expertise can complement each other in alleviate these challenges.	**(15)**
	b) Briefly discuss the main elements of mitigation and principles for their application. Consider how these might be used as part of EIA good practice locally.	**(10)**

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4)	Discuss **five (5) theories** of sustainability and critique their applicability to the Zimbabwean construction sector.	**(25)**

- THE END -

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