



GWANDA STATE UNIVERSITY

FACULTY OF ENGINEERING AND ENVIRONMENT

DEPARTMENT OF GEOMATICS AND SURVEYING

Mining Survey

ESG 3109

Final Examination Paper

November 2024

Time Allowed: 3 hours

Total Marks: 100

Examiner's Name: Mr T.T Chigova

INSTRUCTIONS

- 1. Answer all questions**
- 2. Each question carries 25**
- 3. Total marks 100**

This Examination paper consists of 4 pages

	Coordinates <table> <tr> <td></td><td>Y</td><td>X</td></tr> <tr> <td>A</td><td>1000.00</td><td>942.25</td></tr> <tr> <td>B</td><td>900.00</td><td>942.25</td></tr> </table> Distances W1W2= 7.32m W1S = 6.10m W2U = 4.00m BS = 57.75m UY = 35.50m YX = 105.35m Angles measured clockwise ABS = 90° 00' 00" BSW₂ = 270° 00' 00" W₂U W₁= 09° 01' 50" W₁SW₂ = 00° 00' 80" W₁U Y = 200° 00' 00" UYX = 240° 00' 00"		Y	X	A	1000.00	942.25	B	900.00	942.25	
	Y	X									
A	1000.00	942.25									
B	900.00	942.25									
	C) Describe the survey procedures that you are required to adopt when you carry out mine survey the method mentioned in part b. (5)										

3)	a) Describe in detail how one can peg a claim of precious metals on the lands of Zimbabwean government.	(10)
	b) You are required to justify the need to establish mine-planning section and employ a mine-planning manager at your mine, write a paper describing the different stages of mine planning and its importance at a mining location.	(10)
	c) Discuss the meaning of mine subsidence and the role of a surveyor in controlling the effects of mine subsidence at a mine.	(5)

4)	a) Ventilation is an integral part of mining operation, define ventilation and what is its role in mining?.	(5)
	b) Mining operations produce a lot of dust, which is hazardous to health, what are the sources of dust in a mine and how is it prevented?	(5)
	c) Mining operations produce a lot of gases, state the sources, properties, detection method and legal limits of the following gases: i) Methane, ii) Hydrogen Sulphide, and iii) Nitrous fumes and Ammonia.	(10)
	d) As a mine surveyor, give a detailed account of how you can ensure safety of workers at a mine through adopting drones as a critical tool on your ventilation system?	(5)