



MASENO UNIVERSITY
UNIVERSITY EXAMINATIONS 2013/2014

FIRST YEAR FIRST SEMESTER EXAMINATIONS FOR THE
DEGREE OF BACHELOR OF SCIENCE IN EARTH SCIENCE WITH
INFORMATION TECHNOLOGY

(MAIN CAMPUS)

NGA 102: FUNDAMENTALS OF GEOINFORMATICS

Date: 22nd November, 2013

Time: 8.30 - 10.30 a.m.

INSTRUCTIONS:

- **Answer Question ONE and any other TWO questions.**
- **Sketch maps and diagrams should be used whenever appropriate.**

NGA 102: FUNDAMENTALS OF GEOINFORMATICS

1. a. Discuss common types of errors and their relative importance in surveying. (12 marks)

b. Write concise notes on the following:
 - i. Geometric earth models (6marks)
 - ii. Earth surface models (6 marks)c. Explore the importance of a datum in determination of a location. (6 marks)
2. a. Examine the major segments of a satellite position system. (8marks)
b. Examine factors that affect data quality in absolute positioning. (12marks)
3. a. Explain the use of Grids and graticule in determination of a location on a Map. (8 marks)
b. Explain the determination of a horizontal datum with reference to Kenya. (12 marks)
4. a. Explain the concept of relative positioning as used in geoinformatics. (12 marks)

b. Describe the four basic methods of collecting surveying information. (8 marks)
5. Discuss the criteria used in map projection classification. (20 marks)
6. Explain how GPS receivers work in determination of a location. (20 marks)