



MASENO UNIVERSITY
UNIVERSITY EXAMINATIONS 2015/2016

**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: 12th January, 2016

Time: 8.30 - 10.30 am

INSTRUCTIONS:

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

NGA 102: FUNDAMENTALS OF GEOINFORMATICS

1. a) 'Geoinformatics is the integration of different discipline dealing with spatial information'. Discuss. (10marks)
- b) Write concise notes on the following:
 - i. Geographic phenomena (5marks)
 - ii. Spatial reference (4marks)
 - iii. Wide Area Augmentation System (5marks)
 - iv. Geometric earth models (6marks)
2. a) Examine methods used to determine the optical properties in a map. (10 marks)
- b) Assess reasons for adoption of a geocentric datum for Global Positioning System. (10 marks)
3. Examine salient considerations that influence the selection of a suitable map projection. (20 marks)
4. a) Assess four basic scales of measurement and their application in determination of geographic phenomena. (12 marks)
- b) Examine the applications of Satellite-based positioning system. (8marks)
5. Discuss the characteristics of five commonly used map projections. (20marks)
6. a) Explain the concept of relative positioning as used in geoinformatics. (12 marks)
- b) Explain common sources of errors associated with satellite-based positioning. (8 marks)