



MASENO UNIVERSITY
UNIVERSITY EXAMINATIONS 2015/2016

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

MAIN CAMPUS

NGA 209: GIS AND MODELING

Date: 27th April, 2016

Time: 11.00 - 1.00 pm

INSTRUCTIONS:

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



NGA 209: GIS and Modeling

1. a. "GIS can be used as a decision support tool". Discuss. (6 marks)
b. Examine common errors that occur during data input in GIS (6 marks)
c. Examine the responsibilities of a Database Administrator in GIS.(10 marks)
d. Without a topologic data structure in a vector based GIS, most data manipulation and analysis functions would not be practical. Discuss. (8 marks)
2. Examine the main factors that contribute to the failure of a GIS implementation strategy. (20 Marks)
3. a. Discuss the main phases of a GIS implementation plan. (12 marks)
b. Examine the advantages of using vector data model over raster data model to store spatial data. (8 marks)
4. a. Examine salient features to be considered for use when selecting a GIS software package. (8 marks)
b. Examine six steps necessary in data editing and verification process for spatial data in GIS. (12marks)
5. a. Explain the importance of user needs analysis in organizing data for a GIS project. (12 marks)
b. Examine the following concepts
 - i. Spatial indexing (4 marks)
 - ii. Vertical layering (4 marks)
6. Spatial analysis functions are the power of GIS. Discuss. (20 marks)