MACHAKOS UNIVERSITY

University Examinations for 2017/2018

SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF ENVIRONMENTAL STUDIES AND COMMUNITY DEVELOPMENT

SECOND YEAR FIRST SEMESTER EXAMINATION FOR

BACHELOR OF ENVIRONMENTAL STUDIES (COMMUNITY DEVELOPMENT)

BACHELOR OF ENVIRONMENTAL STUDIES (RESOURCE CONSERVATION)

ECD 211: INTRODUCTION TO GEO-SPATIAL TECHNIQUES

DATE: 5/12/2017 **TIME:2.00-4.00 PM**

INSTRUCTIONS:

Answer question ONE and any other TWO questions

QUESTION ONE (30 MARKS)

a) Explain the following key terms as used in geo-spatial techniques

i. Remote sensing (2 marks)

ii. Geographic Information System (2 marks)

iii. Topology (2 marks)

iv. Attribute data (2 marks)

v. Spatial entities (2 marks)

b) Using examples, discuss the spatial questions that can be answered using a Geographic Information System (GIS) (10 marks)

c) As a consultant hired by Machakos county planning department, discuss the steps you would consider in creating a GIS database for Natural Resource Management (10 marks)

QUESTION TWO (20 MARKS)

a) Discuss how you would use the systems life cycle (SLC) approach to manage the development and implementation of a GIS for community projects (10 marks)

b) Explain the general steps in the process of creating a map as GIS output (10 marks)

QUESTION THREE (20 MARKS)

Explain the methods that can be used to check for errors in the encoding of attribute data

(20 marks)

QUESTION FOUR (20 MARKS)

Discuss the general steps of data abstraction in spatial data modelling process and the challenges that must be confronted in the process (20 marks)

QUESTION FIVE (20 MARKS)

a) Explain the advantages of using GIS in siting industrial developments (10 marks)

b) Discuss the factors you would advise the Machakos county government to consider before the implementation of a GIS for Natural Resource Management. (10 marks)