



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE
AND TECHNOLOGY**

UNIVERSITY EXAMINATION 2012/2013

**1ST YEAR 1ST SEMESTER EXAMINATION FOR THE DEGREE
OF MASTERS IN INFORMATION SYSTEMS**

KISUMU LEARNING CENTRE

COURSE CODE: IIS 5113

TITLE: OBJECT ORIENTED ANALYSIS AND DESIGN

DATE: 17/4/2013

TIME: 9.00-12.00NOON

DURATION: 3 HOURS

INSTRUCTIONS

- 1. This paper contains FIVE (5) questions**
- 2. Answer question 1 (Compulsory) and ANY other 2 Questions**
- 3. Write all answers in the booklet provided**

QUESTION 1: 20MARKS

- a) Explain the meaning of the following as used in Object oriented analysis and design 6marks
- i. An Abstract Class
 - ii. Multiple Inheritances
 - iii. Collaboration
- b) Describe the term object and given an example of an object. Explain the characteristic of an object 4marks
- c) Differentiate the following system requirements. 4marks
- i. Functional requirements
 - ii. Non-functional requirements
- d) Describe Booch methodology object oriented methodology 6marks

Question 2:20 marks

- a) Using a sequence diagram, and state diagram explain a computerized ATM in a banking system. 10marks
- b) Explain the meaning of the following as used in Object oriented analysis and design 8marks
- i. An association relationship
 - ii. Class
 - iii. extends
 - iv. Actors
- c) Explain system modeling language 2marks

Question3: 20marks

- a) Explain the Characteristics of Object Oriented and Design 5marks

- b) Interaction diagrams are models that describe how groups of objects collaborate in some behavior, list any two kinds of interaction diagram. 6marks
- c) Explain five importance of code reuse in object oriented analysis and design. 5marks
- d) Differentiate between dynamic and static modeling 4marks

Question4:20marks

- a) Discuss in details Rumbaug object-oriented analysis approach; include different phases and different modeling techniques used. 6marks
- b) Unified Modeling Language includes state diagrams. Describe the purpose of state diagrams. 4marks
- c) List the symbols used in UML state diagrams and briefly explain the meaning of each symbol. 6marks
- d) Differentiate between dynamic and static modeling 4marks

Question5: 20marks

- a) Discuss four advantages USE CASE and ROBUSTNESS ANALYSIS when used in objects oriented analysis and design. 8marks
- b) Use the scenario below to draw a *use case class diagram* and then a *sequence diagram* 12marks

Scenario

- i) Caller lift up the telephone receiver
- ii) Caller creates original caller control
- iii) Caller checks with the switchboard
- iv) PlayDialtone create
- v) ListenDialtone and analyze digits
- vi) Create and have call record
- vii) Setup the call to the receiver
- viii) SendSetupMessage to establish the receiver on the other end
- ix) Then the communication is established