



# MASENO UNIVERSITY

## UNIVERSITY EXAMINATIONS 2012/2013

SECOND YEAR SECOND SEMESTER EXAMINATIONS  
FOR THE DEGREE OF BACHELOR OF SCIENCE IN  
INFORMATION TECHNOLOGY AND BACHELOR OF  
SCIENCE IN MATHEMATICS & ECONOMICS WITH  
INFORMATION TECHNOLOGY  
(MAIN CAMPUS)

### CCS 208: SYSTEM ANALYSIS AND DESIGN

*Date: 23<sup>rd</sup> July, 2013*

*Time: 2.30 – 4.30 p.m.*

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#### INSTRUCTIONS:

- ◆ Attempt Question ONE (COMPULSORY) and any other TWO questions.

**MASENO UNIVERSITY**  
**SECOND YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE IN INFORMATION**  
**TECHNOLOGY, MATHEMATICS & ECONOMICS**  
**2012/2013**

Course Code: CCS208

Course Title: System Analysis and Design

Date:

Time: 2 Hours

**INSTRUCTIONS**

Answer **QUESTION ONE** and **ANY OTHER TWO** questions

**Question One (30 Marks) – Compulsory**

- a) As a system analyst, describe the three main roles that you play in guiding the development of the system (6 Marks)
- b) Enumerate four merits of using closed questions during requirements gathering over open – ended questions (4 Marks)
- c)
  - i. Explain what you understand by the term prototyping (2 Marks)
  - ii. Describe the three kinds of prototypes that can be used by a system analyst (6 Marks)
- d) What are the four advantages of using a data flow approach over narrative explanations of data movement (4 Marks)
- e) State the three effectiveness objectives of a system database (3 Marks)
- f) Keying is often the slowest part of a computer system, and good dialog will minimize the number of keystrokes required. This can be accomplished in a number of different ways. Outline any five (5 Marks)

**Question Two (20 Marks) -Basics**

- a) As the CEO of Alpha-Omega System Ltd., you are in the process of employing a System Analyst who would guide the In-house software development. Clearly explain the requirements that you would propose to be included in the advertisement to be sent to the press (6 Marks)
- b) Using an illustration, describe the various information systems that as an analyst you may be involved in developing for your organization (8 Marks)
- c) Problem Analysis, Requirements Analysis, and Logical Design are phases of systems development. Describe the activities which are carried out in each of them (6 Marks)

**Question Three (20 Marks) – Requirements Elicitation**

- a) Apart from interviews and JADs, describe any other two techniques of requirements gathering (4 Marks)
- b) As a newly hired System Analyst *Jakom Inc.* which is software super-house, your first assignment is interview the members of *Safaricom Ltd.* in order to elicit the requirements of a system that will be used by the visually impaired. Explain the procedure you would follow in preparation of this interview (10 Marks)

- c) Explain the three major drawbacks of using Joint Application Development (JAD) as a mode of requirements elicitation (6 Marks)

**Question Four (20 Marks) – Systems Analysis**

- a) Kimondolo is the System Analyst of *Konza Techno Ltd.* and you are his deputy. He does not believe in use of prototyping for system development. As his assistant, you have convinced him that prototyping is the sure way to go on a project where you are the leader. Explain the procedure you would employ to ensure the success of the prototypes that you develop (8 marks)
- b) Outline the basic rules that need to be followed when developing DFDs (4 Marks)
- c) TransIT policy is to ensure up-to-date information on the processing and current location of each shipped item. To execute this, TransIT relies on a company-wide database. Shipped items are the heart of the TransIT product tracking system. Shipped items can be characterized by item number (unique), weight, dimensions, insurance amount, destination, and final delivery date. Shipped items are received into the TransIT system at a single retail center. Retail centers are characterized by their type, uniqueID, and address. Shipped items make their way to their destination via one or more standard TransIT transportation events (i.e., flights, truck deliveries). These transportation events are characterized by a unique scheduleNumber, a type (e.g, flight, truck), and a deliveryRoute.
- i) Identify the entities that constitute this database and the attributes in each (4 Marks)
- ii) Draw an Entity Relationship diagram that captures this information about the TransIT system. (4 Marks)

**Question Five (20 Marks) – System Design**

- a) List any six objectives an analyst seeks to achieve to attain an effective output design (6 Marks)
- b) Maseno University needs to keep better track of students and others who use the many computers available in the Library.
- i. Design and draw a representation of a display screen for students to use in signing into the computers in the library. Label the three sections of a display that you included (5 Marks)
- ii. Design a paper form to be left alongside each computer daily that users who are part of the community (but are not students) are required to fill out. The form should ask for name, date and time of visit, general purpose for computer use (i.e., word processing, Web surfing, examining real estate documents online), and the time they have logged off. Label the seven sections of a form that you included (9 Marks)