



ELIZADE UNIVERSITY, ILARA-MOKIN, ONDO STATE
FACULTY OF ENGINEERING
DEPARTMENT OF ELECTRICAL AND COMPUTER
ENGINEERING

SEMESTER II EXAMINATION, 2015/2016 ACADEMIC SESSION

COURSE TITLE: Systems Analysis and Design

COURSE CODE: EEE324

EXAMINATION DATE: 18TH JULY, 2016

COURSE LECTURER: Abaye, Andrew

TIME ALLOWED: 3HRS

HOD's Signature

INSTRUCTIONS:

1. ANSWER **ALL** QUESTIONS
2. SEVERE PENALTIES APPLY FOR MISCONDUCT, CHEATING, POSSESSION OF UNAUTHORIZED MATERIALS DURING EXAM.
3. YOU ARE **NOT** ALLOWED TO BORROW CALCULATORS AND ANY OTHER WRITING MATERIALS DURING THE EXAMINATION

Exam Brief

Learning Outcomes:

After completing the module you should be able to:

1. Demonstrate a critical understanding of systems life cycles;
2. Compare and contrast different systems life cycles;
3. Demonstrate a critical understanding of systems analysis & design techniques;
4. Apply your understanding of systems analysis and design techniques by undertaking a systems investigation on a given scenario and critically evaluating their solution.

Please note that tutors will use the criteria set out below in assessing your work.

Scenario

You are part of an IT company specializing in the design and development of computerized business systems. Your consultancy has won a contract from a client. They are looking to replace the old manual system they have had for the last 25 years with a new computerized system. You have been provided with a description of the client company below.

Client Information

Ade and Ade Sports & Leisure (AASL) is a (fictitious) retail company that supply sports equipment to the general public and specialist sports equipment to professionals throughout Nigeria.

The company takes orders by phone from customers who can order many quantities of many items that AASL have in their current catalogue. Items include cricket, rugby, football, tennis and golfing items to name but a few. AASL pays a printing firm to create the catalogue but would rather create their own catalogue every 12 months from the data held in their local database.

The suppliers to AASL supply many items, but each item is supplied by one main supplier. For example rugby balls are only supplied by Danta, but Danta supplies many other sporting types of equipment. (E.g. pads, headgear, boots etc.)

AASL is eager to add further customers to their information system so that they can email their customers with any specials that are currently available. This will act as a spur to encourage sales in the marketplace and keep the public up-to-date about the new sports range of items available for purchase.

Salespersons at AASL are paid a fortnightly bonus which is determined by the amount of sales they have made for each month. This is along with their regular basic salary. Also tax and other deductions are made automatically by the system. Naturally, tax details, address and other employment details will need to be held in the system.

Another requirement of the system is that it needs to be kept up-to-date with any new customers (new registrations), active customers (actual purchasing customers), non-active customers (customers that need to be deleted from the system).

Exam Tasks

Using the given scenario, you are required to address the following three individual exam tasks so that you undertake a systems analysis and design investigation and produce solution, as follows:

Task 1

- a) Which are the traditional lifecycle models for software development? Give a brief description of each and discuss whether and why they are adequate (or not) for object-oriented development. **(5 Mark)**
- b) Decide on a process based system lifecycle model that you could use for this project. Name and briefly outline each of the main steps that this lifecycle uses to solve a problem. **(5 Mark)**
- c) Provide an argument for using this model rather than others that could be used, and remember to relate your reason to the actual scenario. **(5 Mark)**

Note 1: Use appropriate references for this task.

- a) Provide a **concise** statement of what you consider the main benefits of implementing a computerized system could be from reading the scenario.
- b) To identify the business need for the proposed system you will need to create a set of survey questions that you can give to the relevant stakeholders (users) – this will be used as evidence, that this is a worthwhile problem worth solving
 - 1) Write six (6) open type questions.
 - 2) Write six (6) closed type questions.**(9 Mark)**

Task 3: Your diagrams must done using Microsoft Visio and uploaded to the exam submission page as a single "Word or PDF document"

- a) Create the following diagrams to model the specified system's processes, by using appropriate systems analysis techniques.
 - 1) Level 0 (Context) Diagram
 - 2) Level 1 Dataflow Diagram (Level 1 DFD)**(15 Mark)**
- b) Create the following diagrams to model the specified system's data, by using appropriate systems analysis techniques.
 - 1) Entity Relationship Diagram (ERD).
 - 2) Entity Life History Diagram (ELH) (for this part only, map the part of scenario that deals with "Customers").

(15 Mark)

c) Evaluate your final system design and make mention of any extensions to the system that may be needed in future. **(6 Mark)**

Note 3: It is important that your diagrams are consistent with the scenario – however you may add or interpret the scenario to properly complete these diagrams.

Note 4: Any assumptions you make for the DFD and ERD should be noted at the end of your report. Also any M: N relationships in the ERD should be resolved.

Guidelines:

You MUST underpin your analysis and evaluation of the key issues with appropriate and wide ranging academic research and ensure this is referenced using the BU Harvard system. You must use the Harvard Referencing method in your Exam Submission.

Additional notes:

Exam paper submitted late will not be accepted and will be marked as a 0% fail.

Your final work should be submitted as a single Word (MS Word) or PDF file.