



COLLEGE OF BUSINESS, PEACE, LEADERSHIP AND GOVERNANCE

NCIS401: SYSTEMS ANALYSIS AND DESIGN

END OF SECOND SEMSTER EXAMINATIONS

MAY 2021

DR KANDIERO. A

TIME: 7 HOURS

INSTRUCTIONS

1. Answer any **ONE** question.
 2. Compile your answer into one consolidated PDF format document.
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Question 1[100]

- a) Apply the tools and techniques you learned in this course to design a questionnaire to learn more about:
 - (i) the registration process at Africa University [25 marks]
 - (ii) how customers place orders at a local business [25 marks]
- b) Use Microsoft Word or another word processing program to design a simple form, using the program's form-filling feature. [50 marks]

Question 2 [100]

PERSONAL TRAINER, INC.

Personal Trainer, Inc., owns and operates fitness centers in a dozen Midwestern cities. The centers have done well, and the company is planning an international expansion by opening a new “supercenter” in the Toronto area. Personal Trainer’s president, Cassia Umi, hired an you as an IT consultant, to help develop an information system for the new facility.

Background

The examiner assumes you have completed a preliminary investigation and performed the fact-finding and now you will use the results to develop a logical model of the proposed information system.

Tasks

- 1. Prepare a context diagram for the new system. [40 marks]
- 2. Prepare a diagram 0 Data Flow Diagram (DFD) for the new system [40 marks]
- 3. Write a brief memo that explains the importance of leveling a set of DFDs. [10 marks]
- 4. Write a brief memo that explains the importance of balancing a set of DFDs. [10 marks]

Question 3 [100 Marks]

NEW CENTURY HEALTH CLINIC

New Century Health Clinic offers preventive medicine and traditional medical care. In your role as an IT consultant, you will help New Century develop a new information system.

Background

The examiner assumes you began the systems analysis phase at New Century Health Clinic by completing a series of interviews, reviewing existing reports, and observing office operations. Then, in you acquired more information and developed a set of DFDs, process descriptions, and a data dictionary. Now it is time to practice the object modeling skills you learned in this course. Then complete the following tasks.

Tasks

- 1. Identify possible use cases and actors, and create a use case diagram for the New Century Health Clinic system. [40 marks]

2. Select one of the use cases and create a class diagram. [20 marks]
3. Create a sequence diagram for the use case that you selected. [20 marks]
4. Create a state transition diagram that describes typical patient states and how they change based on specific actions and events. [20 marks]

END OF EXAMINATION
