# **CLARENCE FITZROY BRYANT COLLEGE**



#### **PROGRAMME:** *INFORMATION TECHNOLOGY ASSOCIATE DEGREE*

CURRICULUM:	Information and Communications Technology
COURSE TITLE:	Systems Analysis and Design
COURSE CODE:	IFTH1009
LEVEL OF STUDENTS:	N/A
CREDITS:	3
SEMESTER:	2 (Two)
DURATION:	45 hours
PREREQUISITE(S):	None

### RATIONALE

All ICT students need to develop a complete overview of the information system building process from initial problem definition, to analysis, design, implementation and maintenance.

This systems analysis course provides comprehensive experience of the process of information system building. It provides the Information systems student with exposure to business system problems and opportunities to use systems modelling techniques to represent and solve them.

## **COURSE DESCRIPTION**

This course provides instruction concerning three main concepts:

- 1. (a)The Systems Development Life Cycle,
- 2. (b)The prototyping process,
- 3. (c) Rapid Applications Development, and
- 4. (d) Modelling techniques under the conventional and object-oriented approach to systems development.

On completion of this course students should be able to:

- 1. Explain the differences between data and information.
- 2. Create different types of information systems.
- 3. Use diagram to show the information flow in different information systems.
- Apply knowledge of the stages information system development such as problem Definition, Feasibility Study, Analysis, Design, Construction, Testing, Implementation, Evaluation and Maintenance to create a solution to real problems.
- 5. Describe the processes involved in prototyping.
- 6. Explain the stages of prototyping.
- 7. Use one of the two types of prototyping: throwaway and evolutionary prototyping during system development.
- 8. Describe the advantages and limitations of each type of prototyping.
- 9. Use the rapid application development process to create a product.

### **KNOWLEDGE CONTENT**

- 1. Systems Theory
  - Data versus information
  - A system
  - A system diagram

- 2. The systems development life cycle
  - The stages of Problem Definition, Feasibility Study, Analysis, Design, Construction, Testing, Implementation, Evaluation and Maintenance.
  - The advantages and disadvantages of the SDLC.
  - Diagram of the SDLC.
- 3. Prototyping
  - Definition
  - The stages of prototyping.
  - Types of prototyping: throwaway and evolutionary prototyping.
  - Advantages and limitations of each type of prototyping.
  - Rapid Applications Development
- **4.** Definition of RAD
  - The advantages and limitations of RAD.
  - The major components of RAD: Incremental development, Prototyping, Time boxing, the MOSCOW rules, The Pareto Principle, Systems champion, Joint Applications Development and the use of CASE tools.
- 5. Approaches to Systems Development
  - Conventional approach to systems development.
  - The THREE views of a system: Functional, Data and Behavioural.
  - Modelling techniques under the conventional approach such as, Structure Charts, System Flowcharts, Data Flow Diagrams, Entity Relationship Diagrams, and Entity Life Histories.
- 6. The Object Oriented Development (OOD) approach to systems development.
- 7. Modelling techniques within the OOD approach: use case diagrams, sequence diagrams, class diagrams and state diagrams.

# **TEACHING AND LEARNING METHODS**

To facilitate fulfilment of the requirements of this course, the teaching and learning sessions will utilise the following approaches:

- Demonstrations
- Guided Practice
- Group Work
- Lab Work
- Independent Work

# **ASSESSMENT PROCEDURES**

In this course marks will be assigned as follows:

Coursework 60% (Written papers and labs)

Examination 40% (Mid-term 10%; Final 30%)

## **ASSESSMENT SUMMARY**

Task / Assignment No. & Name	Due Date	Time	Weight	Туре	Learning Outcomes
1. Oral	13 <sup>th</sup> Feb.	3:30 pm	20%	Class	1, 2, and 3
Presentation /				Work	
Video					
2. Practical /	12 <sup>th</sup> Mar.	3:30 pm	30%	Project	4, 5, and 6
Video					
3. Mid Term	23 <sup>rd</sup> April.	3:30 pm	20%	Test	7, 8 and 9
4. Final Exam	May		30%	Individual	1 - 9

Nb: Dates are subjected to be changed.

## **TEXTBOOKS AND REFERENCES**

None