


INTI INTERNATIONAL UNIVERSITY
COURSE STRUCTURE

PROGRAM: DIPLOMA IN INFORMATION AND COMMUNICATION TECHNOLOGY

1.	NAME OF COURSE/MODULE : SYSTEM ANALYSIS & DESIGN																								
2.	COURSE CODE: ICT1106																								
3.	RATIONALE FOR THE INCLUSION OF THE COURSE/MODULE IN THE PROGRAMME : The basic knowledge of system analysis and design processes will enable the students to analyse computing problems.																								
4.	STUDENT LEARNING TIME (SLT)	Total Face to Face					Total Student Independent Learning Time																		
		L	T	P	O	A	OL	IL																	
	L = Lecture T = Tutorial P = Practical(Lab) O= Others A= Assessment OL=Online learning IL= Independent learning	28		14		3	14	101																	
5.	CREDIT VALUE: 4																								
6.	PREREQUISITE (if any): ICT1104 Database Management																								
7.	LEARNING OUTCOMES: On completion of the course, students will be able to: 1. Apply general system analysis and design concepts in system development environment. 2. Utilize UML CASE tools appropriately in system development context. 3. Apply the basic principles of system modelling in systems analysis, design and development according to life cycle methodology. 4. Apply the knowledge of concepts and characteristics of objects in system designing by construct a range of simple UML diagrams.																								
8.	SYNOPSIS: This module explores the nature and role of information systems and the process of their development. It provides an introduction to information system primarily for students following courses which contain a major element of computing and/or information technology. The module gives students a practical introduction to the information system development process, its constituent stages and associated techniques and tools. It establishes a firm foundation for subsequent further study of the information systems and database development processes. This module also explores on how information systems model the real world domain and teaches the foundations of object-oriented systems analysis using a standard notation. By adopting this approach, this module able to provide a practical introduction to specific modelling tools and place them in the context of a Systems Development Life Cycle.																								
9.	MODE OF DELIVERY: Lectures, Laboratory, Small group discussion, Tutorials are conducted face to face and online.																								
10.	ASSESSMENT METHODS AND TYPES: <table><tr><th>Method</th><th>Types</th><th>Weightage (%)</th></tr><tr><td rowspan="5">Continuous Assessment</td><td>Project</td><td>20</td></tr><tr><td>Test</td><td>15</td></tr><tr><td>Online Quiz</td><td>5</td></tr><tr><td>Lab Tutorial 1</td><td>10</td></tr><tr><td>Assignment</td><td>10</td></tr><tr><td>Summative Assessment</td><td>Final Examination</td><td>40</td></tr></table>								Method	Types	Weightage (%)	Continuous Assessment	Project	20	Test	15	Online Quiz	5	Lab Tutorial 1	10	Assignment	10	Summative Assessment	Final Examination	40
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11.

CONTENT OUTLINE OF THE COURSE/MODULE AND THE SLT PER TOPIC:

Sessions	Topics	LO	L	T	P	OL	Total		
							O	A	IL
1-4	System Theory and Information System Environment Define information system, Types of Information Systems, Components of information system, methods of system development (Structured analysis, Object-oriented analysis, agile method, JAD, RAD), System Development Life Cycle, People involved and their roles, responsibilities of system analyst.	1	4			2			
5-7	Preliminary Investigation Review of system request, Objectives of Investigation, Identify Problems, types of Feasibility Study, Preliminary Investigation Report; Fact-finding Techniques such as interviewing, research, prototyping, questionnaires, and sampling, Successful communications both oral and written	1	3			2			
8-10	Project Management tools Four main tasks in project management, work breakdown structure (WBS), project scheduling tools: Gantt Chart, PERT/CPM; identify critical path, non-critical tasks, slack time and shortest duration	1	3		2	1			
11	Overview of Structured Approaches to Systems Development Basic concepts of structured approach.	3	1		2	1			
12-13	Introduction to Object Oriented Approach Object-Oriented Terms and Concepts, Relationships among objects and classes	2	2		2	1			
14-16	System Modelling Using the Object Oriented Approach and UML Applying object models for proposed system based on Requirements Specifications; Categories of system requirements: input, outputs, processes, performance, control; functional and non-functional requirements	2	3		2	1			

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17-19	Identifying Classes, Identifying Objects, Object Associations, Specifying Object Methods, characteristics of object modelling: encapsulation, inheritance, polymorphism, message passing. Simple Inheritance sub-classes and super classes	3	3		2	1			
20-22	Requirement Analysis: What Must a Requirement Model Do? Use Case Realization, Actors and Use Case and Class Diagram	4	3		2	2			
23-26	UML Modelling Concepts: Models and diagrams, drawing activity diagrams. Object interaction and Collaboration: sequence diagram and collaboration diagrams.	4	4		2	2			
27-28	Implementation, Evaluation and Maintenance Types of testing, Types of training, Importance of Training, Types of Changeover methods, Importance of maintenance and of a post-implementation evaluation.	3	2			1			
	TOTAL		28		14	14		3	101

Lecture (L), Tutorial (T), Practical (P), Other(O), Assessment (A), Online learning(OL); Independent Learning (IL); Learning Outcome (LO)

12. **MAIN REFERENCE(S) SUPPORTING COURSE:**

1. Alan Dennis, Barbara Haley Wixom David P. Tegarden, *Systems Analysis and Design with UML. 4th Ed.*, John Wiley & Sons, 2012

ADDITIONAL REFERENCES (at least 2):

1. Kendall, K.E., & Kendal, J.E., *Systems Analysis and Design*, 9th Ed., Pearson Prentice Hall, 2013. ISBN-13: 9780133023442
2. Shelly G.B & Rosenblatt H.J, *Systems Analysis and Design*, 9th Edition, Cengage Learning, 2011. ISBN: 13: 9781133274636

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13. **OTHER ADDITIONAL INFORMATION (if any):****LABORATORY WORK:**

Week	Practical Work
4	<i>Introduction to Gantt Chart. Drawing Gantt Chart using Microsoft Project 2013</i>
5-6	<i>Introduction to CASE tool's features and functions. Introducing UML and the notations used in UML diagrams using Microsoft Visio 2013</i> <i>Develop Simple Class Diagrams</i>
7-8	Develop Use Case Diagram
9	Activity Diagrams
10	Develop Sequence and Collaboration Diagram

FINAL EXAMINATION FORMAT:

Duration: 2 hours

Section A: Answer TWO compulsory questions.

Section B: Answer any TWO out of THREE questions.

All questions carry equal marks

GRADING SCALE:

A+ (90-100), A (80-89), A- (75-79), B+ (70-74), B (65-69), B- (60-64), C+ (55-59), C (50-54), C- (45-49), D (40-44), F (0-39).

Resit Pass (50-100), Resit Fail (0-49).

Important Note:

A student who obtains a grade C- (45 -49 marks) in a 100% coursework module is required to resubmit the coursework component determined by the lecturer and ascertained at the Exam Board. Resubmission marks will be capped at a maximum of 50 marks or a grade C.

A passing mark can only be achieved when the student attempts both the coursework and final exams.

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