INTI INTERNATIONAL UNIVERSITY
COURSE STRUCTURE

PROGRAMME: DIPLOMA IN INFORMATION AND COMMUNICATION TECHNOLOGY

1.	**NAME OF COURSE/MODULE : PROGRAM LOGIC FORMULATION**
2.	**COURSE CODE: ICT1101**
3.	**RATIONALE FOR THE INCLUSION OF THE COURSE/MODULE IN THE PROGRAMME :** This course is an introduction to program logic formulation and design in preparation for programming course. The diagramming tools develop students' analytical skills.

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	61

5.	**CREDIT VALUE**: 3
6.	**PREREQUISITE (IF ANY):** None
7.	**LEARNING OUTCOMES:** On completion of the course, students will be able to: 1. Describe the steps necessary in formulating logic and analyzing a problem. 2. Apply the most efficient logic structure in designing an appropriate solution. 3. Formulate solution to programming problem using IPO, PAC, Data Dictionary, Flowchart and Algorithm.
8.	**SYNOPSIS:** This course presents basic concepts of problem solving, an introduction on how problems are solved on computers and steps in analyzing a problem and designing an appropriate solution using various types of logic diagramming which can be applied in any computer languages. It includes the various standards needed to provide a degree of predictability in programs of a common type, written in a common language or written for computer installations.
9.	**MODE OF DELIVERY**: Lectures, Tutorials, Practical. Lectures and Tutorials are conducted both with face to face and online
10.	**ASSESSMENT METHODS AND TYPES:**

Method	Types	Weightage (%)
Continuous Assessment	Assignment 1	20
	Assignment 2	20
	Test	20
Summative Assessment	Final Examinations	40

CERTIFIED TRUE COPY

Jaya Kumari Krishnan
Senior Officer
Admissions & Records
INTI International University

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

Sessions	Topics	LO	L	T	P	OL	Total		
							O	A	IL
1 - 2	**Introduction to Programming Concepts** Nature of a computer program, categories of programming languages, good programming practices.	1	2			1			
3 - 4	**Problem Solving Concepts for the Computer** Concept of Constants and Variables, Rules of naming constants and variables, Data Types, Assignment statement, Arithmetic Expressions, types of operators.	1	2			1			
5 - 7	**Problem Solving Organization** Tools used in program development – PAC, structure chart, IPO, algorithm, and flowcharts. Data dictionary,	2	3		2	1			
8 - 10	**Sequential Logic Structure** Using program development tools to analyze problem.	2, 3	3		2	2			
11 - 15	**Decision Logic Structure** Multiple IF/THEN/ELSE instructions, The Straight-through logic, the Positive Logic, the Negative Logic, Logic Conversion, Decision Tables. Using program development tools to analyze problem.	2, 3	5		4	2			
16 - 17	**Case Logic Structure** Concepts of CASE structure, uses of CASE: Menus, using program development tools to analyze problem.	2, 3	2		2	2			
18 - 25	**Repetition Logic Structure** The counter, accumulator, types of control loop: counter control loop and sentinel control loop, types of loop logic structures, Pre-condition loop, Post-condition loop, Automatic-Counter loop, Nested Loops, Indicators. Using program development tools to analyze problem.	2, 3	8		4	3			
26 - 28	**Introduction to modular program concept** Modular program concepts: cohesion, coupling, local variable and global variable, parameter passing, coupling diagram.	1	3			1			
	TOTAL		28		14	14		3	61

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

CERTIFIED TRUE COPY

Jaya Kumari Krishnan
Senior Officer
Admissions & Records
UCTI International University

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

- Sprankle, M. & Hubbard, J., (2012) Problem Solving & Programming: Concepts, 9th ed., Pearson Education Inc., New Jersey. (ISBN13:9780137147908)

ADDITIONAL REFERENCES (at least 2):

- Y.D. Liang (2013). *Introduction to programming with C++, 3rd Edition*, Prentice Hall, ISBN-10: 0133252817
- Deitel & Deitel (2011). C++ *How to Program, 8th Edition,* Prentice Hall, ISBN – 10: 978-0132662369

13. **OTHER ADDITIONAL INFORMATION (IF ANY):**

Final Examination Format
Duration:
Duration: 2 hours
Section A (40 marks): Answer ALL the 20 multiple-choice questions.
Section B (60 marks): Answer any THREE out of FOUR 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)

Laboratory Work Specifications (if any)

Week	Practical Work
3-4	Introduction of how to writing a C++ program. Details on the declaration, input statement, process and output. Start sequential statement.
5-6	Introducing selection structure (If statement)
7	Switch statement
8-9	Iteration structure – using while loop, do-while loop, for loop, nested loop

CERTIFIED TRUE COPY

Jaya Kumari Krishnan
Senior Officer
Admissions & Records
INTI International University