Revised: 06/2024

COURSE STRUCTURE

Name of Course: HIGH LEVEL PROGRAMMING

Course Code: DCS2103

Credit Hours: 4

Prerequisite/co-requisite: DCS1101 Programming Fundamentals

Summary: This course is an introduction to the Python programming language for students which covers data types, control flow, object-oriented programming, and graphical user interface-driven applications. Python is a language with a simple syntax, and a powerful set of libraries. It is an interpreted language, with a rich programming environment, including a robust debugger and profiler.

Course Learning Outcomes:

Upon completing this course, the students will be able to:

CLO1: Explain basic principles of Python programming language. (C2, PLO1)

CLO2: Able to display the ability to adapt and combine standard algorithms to solve a given problem using Python. (P3, PLO3)

CLO3: Able to display the ability to use Python in developing applications using library software and standard programming constructs.(P3, PLO6)

Course Format:

Total Student Learning Time (SLT) (L = Lecture; T = Tutorial; P = Practical; EL = E-Learning) :					
Learning Hours				**Independent Learning (hr)**	**Total Student Learning Time (hr)**
L	T	P	EL		
28	0	26	14	92	160

Teaching and Delivery Methods/ Teaching Methodology:

Lectures, Tutorial and Practical/Laboratory work delivered in a combination of blended & independent learning.

E-Learning provided by INTI makes learning more accessible and convenient for the students. The blended model utilized by INTI is the integration of E-learning via INTI's Learning Management System and the conventional lecturer-led classroom activities. INTI students are required to access to the online learning materials (additional notes, reading materials, online assessments, discussion forums and etc.), so as to acquire a complete learning process. This also promotes self-directed learning in encouraging INTI students to be independent learners.

Syllabus:

Lecture	Course Content Outline	CLO*
1 - 2	**An Introduction to Python**	1,2
3 - 4	**Values and Variables** - Integer and String Values - Identifiers - User Input - String Formatting	1,2
5 - 6	**Expressions and Arithmetic** - Expressions - Arithmetic Examples	1,2
7 - 10	**Conditional Statements** - Boolean expressions - If/Else statement - Other Conditional Expressions	1,2
11 - 12	**Iteration** - Loops	1,2
13 - 14	**Using Functions** - Introduction to Using Functions - Functions and Modules	1,2
15 - 18	**Writing Functions -1** - Function Basics - Parameter Passing - Custom Functions vs Standart Functions - Refactoring	1,2
19 - 20	**Writing Functions -2** - Global Variables - Making Functions Reusable - Functions as Data	1,2
21 - 22	**Objects** - Using Objects - String, File Objects	1,2
23 - 24	**Lists** - Using Lists - Building Lists - List Traversal	1,2,3
25 - 26	**Tuples, Dictionaries, and Sets** - Storing Aggregate Data - Enumerating the Elements of a Data Structure	1,2,3

27 - 28	**Class Design** - Composition and Inheritance	1,2,3

Student Evaluation:

Continuous Assessment		**Percentage (%)**	**CLO**
1	Tests	20	1
2	Assignment 1	20	2
3	Assignment 2	20	3
Total		**60%**	
Final Assessment		**Percentage (%)**	
Final Examination		40	1
Total		**100%**	

Final exam format:
Duration: 2 hours

The students will be required to answer:
Section A: **Answer All MCQs**
Section B: **Answer All Questions.**

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, RP (50-100), Resit Fail, RF (0-49)

IMPORTANT NOTE:
Students are required to "**PASS**" BOTH continuous and final assessment in order to pass the subject.

Additional Information: Python

Main Reference(s) Supporting Course:

1. Tony Gladdis (2021), Starting Out with Python, Pearson, ISBN: 978-1292408637.

2. Kenneth A. Lambert (2019) Fundamentals of Python: First Programs 2nd Edition, Cengage Learning 2nd Edition

LABORATORY WORK:

Lab	**Practical Work**
1	How to Compile and Run and debug a python program. Program Input and output
2	Arithmetic Calculations, Relational, and Logical Operators, Sequential Structure
3	Decision Structures
4-5	String, List and tuple
6	Iteration/ Loop structure
6-7	Functions
8-9	Dictionaries and sets
10	File processing and Dealing with Error
11-13	Class and Object