COMSATS University Islamabad
Department of Computer Science
Course Description Form (CDF)

Course Information	
Course Code: **CSC103**	Course Title: **Programming Fundamentals**
Credit Hours: **4 (3, 1)**	Lecture Hours/Week: **3**
Lab Hours/Week: **3**	Pre-Requisites: **None**

Course Objectives

- To introduce various programming language paradigms;
- To develop the skills to analyze, design, test and translate problems into computer programs;
- To present the fundamental programming concepts, including basic type system;
- To demonstrate basic coding, testing and debugging techniques;
- To provide an implementation of the concepts.

Course Contents

This course emphasis the basic concepts used in programming. The topics include: Computer Programming; Basic Syntax & Semantics of a Higher-Level Language; Conditional & Iterative Control Structures; Functions & Parameter Passing; Recursion; Arrays; String Processing; Exception Handling; and File I/O.

Unit wise Major Topics

Unit	Topic	No. of Teaching Hours
1.	Computer Programming: Fundamental Concepts and Programming Paradigm.	3
2.	Basic Syntax & Semantics of a Higher-Level Language: Program Style & Documentation; Variables & Primitive Data Types; Expressions & Assignments; and Simple I/O.	7.5
3.	Conditional & Iterative Control Structures.	9
4.	Functions & Parameter Passing; and Recursion.	9
5.	Arrays; String Processing,	9
6.	Exception Handling, and File I/O	7.5
Total Contact Hours		**45**

Mapping of CLOs and GAs

Sr.#	Unit #	Course Learning Outcomes	Blooms Taxonomy Learning Level	GA
		CLO's for Theory		
CLO-1	1-2	Demonstrate the fundamental concepts of programming.	*Understanding*	2
CLO-2	3-5	Employ programming constructs using a programming language.	*Applying*	2,4
CLO-3	6	Handle programs utilizing exception and file I/O.	*Applying*	2-4

	CLO's for Lab				
CLO-4	2-6	Implement a program using programing constructs.	*Applying*	2,4
CLO-5	1-6	Build a medium size application in a team environment	*Creating*	1-4, 6, 10

CLO Assessment Mechanism

Assessment Tools	CLO-1	CLO-2	CLO-3	CLO-4	CLO-5
Quizzes	Quiz 1	Quiz 2 & 3	Quiz 4	-	-
Assignments	Assignment 1	Assignment 2&3	Assignment 4	Lab Assignments	-
Mid Term Exam	Mid Term Exam	Mid Term Exam	-	Lab Mid Term Exam	-
Final Term Exam	Final Term Exam				Lab Project/ Lab Final Term Exam

Text and Reference Books

Textbook:
1. Java How to Program, Deitel, P. & Deitel, H., Prentice Hall, 2019.

Reference Books:
1. Java: The Complete Reference, Herbert Schildt, Prentice Hall, 2018.
2. Introduction to Java Programming and Data Structures, Comprehensive Version, Y.D.Liang, Pearson, 2017.
3. Java: Programming Basics for Absolute Beginners, Nathan Clark, CreateSpace Independent Publishing Platform, 2017.