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**

Catalogue Description:

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; Refactoring; Debugging; Modern Programming Environments; Testing Fundamentals; 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.	6
3.	Conditional & Iterative Control Structures.	7.5
4.	Functions & Parameter Passing; and Recursion.	6
5.	Arrays; and String Processing.	9
6.	Exception Handling; Refactoring; Debugging; Modern Programming Environments: Library Components & their APIs, and File I/O.	9
7.	Testing Fundamentals: Develop Test Harnesses, and Unit Testing.	4.5
Total Contact Hours		**45**

Mapping of CLOs and SOs

Sr.#	Unit #	Course Learning Outcomes	Blooms Taxonomy Learning Level	SO
CLO's for Theory				
CLO-1	1-2	Explain the fundamental concepts of programming.	*Understanding*	1
CLO-2	3-5	Employ basic programming constructs using a programming language.	*Applying*	2,4
CLO-3	6	Handle programs utilizing refactoring, exceptions, and file I/O.	*Applying*	2,4
CLO-4	7	Prepare test harnesses for testing a program.	*Applying*	2,4
CLO's for Lab				
CLO -5	3-6	Implement a program using basic programming constructs.	*Applying*	2,4

CLO -6	1-7	Build a medium size application in a team environment.	*Creating*	2-5

CLO Assessment Mechanism

Assessment Tools	CLO-1	CLO-2	CLO-3	CLO-4	CLO-5	CLO-6
Quizzes	Quiz 1	Quiz 2	Quiz 3	Quiz 4	-	-
Assignments	Assignment 1	Assignment 2&3	Assignment 4	Assignment 4	Lab Assignments	-
Mid Term Exam	Mid Term Exam	Mid Term Exam	Mid Term Exam	-	-	-
Final Term Exam	Final Term Exam					
Project	-	-	-	-	-	Lab Project

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.