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

Course Information

Course Code: **CSC101** Course Title: **Introduction to ICT**
Credit Hours: **3(2,1)** Lecture Hours/Week: **2**
Lab Hours/Week: **3** Pre-Requisites: **None**

Catalogue Description:

This course covers the basics of Information and Communications Technologies. Topics include: Overview of ICT; Computing Models; Computer Systems & Components; Number Systems & Computer Codes; System & Application Software; Introduction to Databases & Information Systems; Computer Networks & Internet; Security; Future trends in ICT; Problem Solving Concepts; Program Development Lifecycle; and Introduction to Python.

Unit wise Major Topics:

Unit	Topic	No. of Teaching Hours
1.	ICT: Overview; Computing Models: Turing Model, Von Neumann Model; Computer Hardware: Processor & its Machine Cycle, Input Devices, Output Devices, and Storage Devices.	3
2.	Number Systems: Binary, Octal, Hexadecimal, and their Conversions; Binary Arithmetic; and Computer Codes.	3
3.	Computer Software: System Software, Application Software, Operating Systems; Introduction to Databases & Information Systems; E-commerce; Computer Networks & Security; Cloud Computing, IoT, and Augmented Reality.	9
4.	Problem-Solving: Concepts, Types, process; Algorithm Representation: Pseudocodes, Flowcharts; Structures: Sequential, Decision and Repetition; Procedures and functions.	4
5.	Programming Concepts: Program Development Lifecycle; Programming Language (Python): Data Types; Variables & Expression; Elementary Programming; Control Structures; Loops; and Functions.	11
Total Contact Hours		**30**

Mapping of CLOs and SOs

Sr.#	Unit #	Course Learning Outcomes	Blooms Taxonomy Learning Level	SO
CLO's for Theory				
CLO-1	1	Explain the basic computing models and related hardware.	*Understanding*	1
CLO-2	2	Work out with different number systems and codes.	*Applying*	1,2
CLO-3	3	Describe the fundamental concepts of ICT domains.	*Understanding*	1
CLO-4	4	Solve computing problems using problem-solving	*Applying*	1,2,4

		process.		
CLO-5	5	Describe the concepts of variables, conditional, repetitive structures, and functions using a programing language.	*Understanding*	1,2
CLO's for Lab				
CLO-6	4	Draw flow charts for problem solving based on an automated tool.	*Applying*	4
CLO-7	5	Implement an algorithm in a programming language to solve a simple problem.	*Applying*	2,4

CLO Assessment Mechanism

Assessment Tools	CLO-1	CLO-2	CLO-3	CLO-4	CLO-5	CLO-6	CLO-7
Quizzes	Quiz 1	Quiz 2	Quiz 3	Quiz 4	-	-	-
Assignments	-	-	Assignment 1&2	Assignment 3	Assignment 4	Lab Assignment	Lab Assignment
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

Textbooks:

1. Understanding Computers: Today and Tomorrow, Comprehensive, Deborah Morley, Charles S. Parker, Cengage Learning, 2017.
2. Python Basics: A Practical Introduction to Python 3, David Amos, Dan Bader, Joanna Jablonski, and Fletcher Heisler, Real Python, 2021

Reference Books:

1. Foundations of Computer Science, Behrouz Forouzan, McGraw-Hill, 2017.
2. Starting Out with Python, Tony Gaddis, Addison-Wesley, 2016.
3. Problem Solving & Programming, Maureen Sprankle, Jim Hubbard, Prentice Hall, 2012.