1.	**Course Title**	**Computer Programming**		
2.	**Course Code**	**CCPS1513**		
3.	**Status**	Faculty		
4.	**Credit Hour**	3 (2+1) 2 lecture (2 hours lecture x 14 weeks) 1 tutorials (1.5 hours per x 14 weeks) Lab work -using simulator & emulator supervised by tutor		
5.	**Semester/Year**	1/1		
6.	**Prerequisites**	N/A		
7.	**Teaching method:**	Distance Learning (Electronic)		
8.	**Evaluation**	**Assessment and Marking Percentage:** Participation 5% Quizzes 15% Project 15% Mid Sem Exam 15% Final Examination 50%		
9.	**Lecturer**			
10.	**Objective of the Subject**	To give an introduction to basic programming concepts through the use of a high-level programming language such as C/C++. It covers the basic notions and techniques for algorithm development and the implementation of algorithms in a high-level programming language.		
11.	**Learning Outcomes**	By the end of the subject, students should be able to: • Identify and apply basic concepts of a high level programming language correctly. • Demonstrate the basic notions and techniques for algorithm development • Implement these algorithms in a high-level programming language correctly and effectively.		
12.	**Synopsis**	The major areas of study include: Software Development Life Cycle, Top-down Design, Program Design Steps and Programming Methodology, Structure Chart, Flowchart, Pseudo Code, Debugging and Documentation Techniques, Identifiers, Data Types, Operators, Various Statements, Type Conversion, Conditional and Control Structures, Functions, Arrays and Pointers, Strings, Structures and Unions, File Handling, Command Line Parameters, Pointers to Functions, Header Files, Stacks, Linked Lists, Bitwise Manipulation, and Programming laboratory exercises.		
13.	**Topics**	Details	Lecture (Hrs)	Tutorial (Hrs)
	Topic 1	**Software Development and Programming Environment** • Software development life cycle • Top-down design with function system structure • program design steps and programming methodology • structure chart • flowchart • pseudo code • Debugging and documentation techniques	2	1.5
	Topic 2	**Syntactic Structure of a Program** • Identifiers • data types • operators • various statements • operator precedence • type conversion • conditional and control structures function • recursive functions.	4	3

	Topic 3	**Arrays** One- and two-dimensional arrays	2	1.5
	Topic 4	• passing individual elements or whole array to a function -Simple sorting and searching on arrays	2	1.5
	Topic 5	• pointers- strings - dynamic memory allocation	2	1.5
	Topic 6	**Structures and Unions** • Structure declaration and definition • accessing structures • array of structures • pointers and structures • Union declaration • enumerated variables	6	4.5
	Topic 7	**File Handling** • Concept of a file • files and streams • standard file handling functions • binary files • random access files.	4	3
	Topic 8	**Advanced Topics** • Command line parameters • pointers to functions • creation of header files • stacks • linked lists • bitwise manipulation	6	4.5
		Total contact hours	28	36
		Equivalent lecture hours	28	14
		Total lecture hours	42	
		Credit hours	3	
14.	**Main reference:** **Textbook:**	1. K. Goyal, The **C** Programming Language by (2007) 2. K. N. King, **C** Programming: A Modern Approach, 2nd Edition (2008)		
15.	**Additional References:** **Other Materials:**	1. Stephen Kochan, Programming in **C** (3rd Edition) (Developer's Library) (2004) 2. Stephen Prata, **C** Primer Plus (5th Edition) (Paperback - Dec 3, 2004) All materials will be available to the students online.		