Course Number and Title:	CS-114 Introduction to Programming	
Credit Hours:	3+1	
Pre Requisite	None	
Instructor (s):	Engr. Hammad Shaukat	
Lab Engineer:	Engr. Shahwar Ali	
Compulsory/Elective:	Compulsory	
If Elective: Depth Core/ Breadth Core:		
Course Schedule:	Lecture:	3 hours/week
	Lab:	3 hours/week
	Office hours:	4 hours/week
Course Assessment:	Assignments:	3
	Quizzes:	3
	Course project:	1
	Lab work:	16 experiments
	Exams:	Mid-semester and Final
Grading Policy:	Quizzes:	10%
	Assignments/Course project:	10%
	Lab work:	20%
	Mid-Semester:	20%
	End-Semester:	40%
Text Book:	Computer Fundamentals By Peter Norton 7th Edition Object Oriented Programming in C++ by Robert Lafore	
Reference Book(s):	Aikman series C++ Using Information Technology by Brian Williams and Stacey Sawyer, McGraw-Hill, Latest Edition. Computer Organization and Architecture: Designing for Performance by William Stallings, Latest Edition, Prentice Hall.	
Course Objective:	To acquaint the students with the structure, operation, programming, and applications of computers.	

Course Learning Outcome	**CLO Statement**	**PLO**	**Bloom**
CLO-1:	History and introduction to Computer Systems	PLO-11	C1
CLO-2:	Enable students to understand working and construction of various computer peripherals, Storage media and types of software.	PLO-2	C2
CLO-3:	An ability to write, debug and execute programs in different programming languages	PLO-3	C3

Topics covered in the course and level of coverage:	• Introducing Computer Systems, Hardware and Software	6 hours
	• Computer Input and output Devices	6 hours
	• Computer CPU and Processors.	3 hours
	• Memory and Storage Devices and their Construction	3 hours
	• Transforming Data into Information	6 hours
	• programming languages, compilation and interpretation, problem specification	6 hours
	• algorithms, flow chart, pseudo code, basic programming techniques	6 hours
	• data types and declaration, header file and linkage	6 hours
	• variables and constants, arrays, input/output, termination, remark, control structures	6 hours
	• branching, conditional structures, repetition and loops, basic library functions	6 hours

	• Social impact of computer age, computers in office, industry and education.	6 hours

Program learning outcomes and how they are covered by specific course outcomes	**Detailed Contents**	**PLO**	**CLO**
	History and importance of Computer Systems and their Uses.	PLO-11	CLO-1
	Looking Inside the Computer Systems, Hardware, Software, Data and User.	PLO-1	CLO-2
	Instruction Processing Cycle.	PLO-2	CLO-2
	Using Input and Output Devices such as Keyboard, Mouse, Monitors and its types, and Printers	PLO-1	CLO-2
	Transformation of Data into Information and Modern CPU.	PLO-2	CLO-2
	Storage Devices, their use, Construction and Managing files.	PLO-1	CLO-2
	Introduction to C++ Programming, Preprocessor Directives, header Files, Tokens, Variables, Data Types, Keywords, Identifiers and Operators.	PLO-1	CLO-3
	Basic input and output of Data in C++, Cin, Cout, Manipulators, Declaration and Initialization.	PLO-1	CLO-3
	Programs in C++ with manipulators	PLO-2	CLO-3
	Conditional Statements and Switch Statements.	PLO-1	CLO-3
	if, if-else, nested if, nested if-else and nested switch statements in C++ programming	PLO-2	CLO-3
	Loops and its Types, do, while, do-while loop and for loop.	PLO-1	CLO-3
	C++ programming problems related to Loops and its types.	PLO-2	CLO-3
	Introduction to uni-directional and multidimensional Arrays	PLO-1	CLO-3

Mapping of CLOs with PLOs and Bloom's Taxonomy Cognitive Levels:

PLO	**1**	**2**	**3**	4	5	6	7	8	9	10	11	12
CLO-1	C1	C1										
CLO-2	C2	C2										
CLO-3		C2										
CLO-4												

Mapping of CLOs with Assessment Methods:

CLOs/Assessment	CLO-1	CLO-2	CLO-3	CLO-4	
Assignments:	√		√		
Quizzes:		√	√		
Course project:			√		
Lab work:		√	√		
Mid-Semester:		√	√		
End-Semester:	√	√	√		