CSC-121: Introduction to Programming (ITP) Syllabus

General Information

Course Number	CSC-121
Credit Hours	3+1 (Theory Credit Hour = 3, Lab Credit Hours = 1)
Prerequisite	None
Course Instructor	

Course Objectives

This is a fast-paced introductory course to the C++ programming language which is intended for those with little or no programming background. This course provides a conceptual and practical introduction to programming. The focus is on programming rather than the particular choice of programming language, with general principles being brought out through the study of 'C/C++'. This course will equip students with tools and techniques to implement a given problem programmatically.

Catalog Description

CSC-121

Course Content

Session No.	Week No.	Topics	Suggested Readings (Chapters)	Assessments
01-03	1	Motivational lecture Introduction to Programming Computer languages levels of Programming languages History and Generations of Programming Languages Interpreter Compiler Assembler Translator Keywords Instruction Logic Flowchart	Notes Chapter 01	
04-06	2	Preprocessor Directives Header Files Compilation Execution Debugging Source Program Object Code cout and cin Linking and Loading main() function Using Escape Sequences(\n, \t etc) Comments(Single and Multiple Line) C++ Building Blocks Identifiers Variables and Constants Variable declaration and initialization	Notes & Chapter 2 & 3	QUIZ # 01

07-09	3	Data Types and their ranges Difference between Operator, Operand and Operation Arithmetic operators Relational Operators	Chapter 2	
10-12	4	Incremental Operators(Pre and Post) Decremental Operators(Pre and Post) Conditional Statements ○ IF statement ○ IF Else Statement ○ Nested IF Else Statement ○ Switch Case Statement	Chapter 4	
13-15	5	Iterative statements(Loops) ○ For Loop ○ While Loop ○ Do While Loop Break and Continue Goto Statement **Discussions/Revision of concepts for First mid**	Chapter 5	ASSIGNMENT # 01
16-18	6-7	Functions ○ Pre-defined ○ User-defined Prototyping method of Function Declaration ○ Function Definition ○ Function Calling ○ Return Type of a Function ○ Parameters and Arguments Function Overloading Scope of a Variable ○ Global and Local Variables	Chapter 6 & 7	
19-21	8	Arrays ○ Array Declaration and Initialization ○ Index of an Array ○ Accessing elements of an arrays ○ Arrays with Loops ○ Two dimensional Arrays	Chapter 8	
		MIDTERM EXAM		
22-24	**9**	Arrays ○ Multiple Dimensional Arrays ○ Operations on Matrices with arrays ○ Passing arrays to Functions ○ Character Arrays ○ Sorting list using Bubble sort	Chapter 8	
25-27	10	Strings in C++ Getline() and Sizeof() functions Pre-defined String functions ○ Strcpy() ○ Strupr() ○ Strlwr() ○ Strcmp() ○ Strlen() ○ Strcat() ○ Strrev()	Notes	
28-30	11	Recursion ○ Direct and indirect recursion ○ Infinite recursion ○ Examples of recursion Covering leftovers Discussion/Revision about concepts Basic concepts of file handling	Chapter 15	

31-33	12-13	Introduction to Files Binary and Text Files Introduction to Streams o fstream o ifstream o ofstream Writing text into a file Reading text from a file Reading first line from a file Reading complete text from a file Reading a specific line from a file	Chapter 13	QUIZ # 02
34-36	14	Pointers Advantages and Disadvantages of Pointers Address Operator(&) Difference Between Pointer Variable VS Ordinary Variable	Chapter 12	
37-39	15	Passing arguments to functions with reference to Pointers Relationship between Pointers and Arrays	Chapter 12	
Onwards	16	**Project Presentation**		
Final Exams				

Text Book

1. D. S. Malik, "C++ Programming from Problem Analysis to Program Design", 7th Edition.

Reference Material

1. Gray J. Bronson, "C++ for Engineers and Scientists", 1st Edition.
2. Herbert Schildt, "Complete Reference to C++", 4th Edition.

Course Learning Outcomes

	Course Learning Outcomes (CLO)
1	Understand the programming paradigm & programming Language fundamentals.
2	Understand and Analyze different programming logic problems and Language syntax problems
3	Ability to Constructs a development process to compute the output and Provide solutions for different programming problems.
4	Ability to work in team or organization as core team member on projects

CLO-GA Map

	GA IDs											
CLO ID	**GA-1**	**GA-2**	**GA-3**	**GA-4**	**GA-5**	**GA-6**	**GA-7**	**GA-8**	**GA-9**	**GA-10**	**GA-11**	**GA-12**
CLO 1	1	0	0	0	0	0	0	0	0	0	0	0
CLO 2	0	1	0	0	0	0	0	0	0	0	0	0
CLO 3	0	0	1	0	0	0	0	0	0	0	0	0
CLO 4	0	0	0	0	0	0	0	0	1	0	0	0

Approvals

Prepared By	
Approved By	Not Specified
Last Update	01/08/2022

Program and Class: CS-I	**Semester: Fall 2022**
Credit Hours: 04 (3+1)	**Instructor: Noor Nabi Dahar** **Email(s):** noornabi@iba-suk.edu.pk; **Office Location: (Academic Coordinator Office)**
Pre-requisite Course: None	**Counseling Hours: Saturday 9:00 am to 1:30 pm**

Mode of instruction (Mark all that apply)

S.No:	Mode of Instruction	Percentage?
1	Traditional classroom + Computer LAB	80%
2	Blended (traditional and online)	0%
3	Other Modern Tools & Technology Platforms	20%

Comments: This course is taught as a part of regular and full time undergraduate program in BBA

Class Assessment Activities Through the Semester.

S.No:	Assessment Criteria	Percentage?
1	Midterm Exam Theory Midterm Exam LAB Practical	**30%** **15%**
2	**Sessional (Theory + Lab)** • Project Presentation = **10%** • 2 Quizes = **5 %** • Assignment = **3%** • Coding LAB task = **5%** • Active Class Participation = **2%** • **Lab Manual= 5%**	**20% + 10%**
4	Final Practical & Viva Voce	**25 %**
5	Final Theory EXAM	**50%**

Note :

- No makeup (even for sessional exams)
- Active Participation in class discussion
- Strict submission deadlines
- Zero marks for the copied quizzes/assignments/Project