

**The Islamia University of Bahawalpur**  
Department of Computer Science & IT

**Course Outline**

**Instructor:** Imran Sarwar Bajwa

**Course Name:** Programming Fundamentals

**Class:** MCS – 1st Semester (Morning)

**Class Room:** Room 10

**Class Day:** Friday, Saturday

**Class Timing:** 8:30 – 10:00

**Course Objectives:**

This course is all about the basic programming skills. Students will learn how to design the algorithms to solve simple problems and then how to program the designed algorithms. Students will study the programming constituents in C/C++ from basic to advance level. At the end of the course, students will be able to understand the problems and design and write appropriate computer programs in C/C++ to solve those problems.

**Pre-Requisites:** None

**Teaching Methodology:**

The class will be conducted in a lecture and discussion environment. The students will be encouraged to participate and ask question during each class session. Students will also do practical work to understand algorithms designing and implementation.

**Books Prescribed:**

1. Let Us C by *Yashwant Kanitkar*
2. How to Program: Using C++ by *Robert Lafore*
3. Programming in C by *Behroz A. Frouzen*
4. C ++ by *Dietal & Dietal*

**Testing and Grading:**

Students will be assessed through Assignments, Quizzes, Lab-Work and Presentation.

- Assignments are compulsory. At least one assignment will be due fortnightly (15 days). These will be due at the start of class on the indicated due dates. Late submissions are not allowed.
- There will be also 2 quizzes and one semester project carrying 20 marks. Students will also present their semester project.

**Marks Distribution**

Grading system for the subject is same as other subjects which is Midterm (30%) and Final Term exam (50%). 20% marks are dedicated for semester Assignments, projects and presentations.

Course Outline

S. No.	Week No.	Contents
1	01	<ul style="list-style-type: none"><li>Basics of Programming &amp; Programming Languages</li></ul>
2	02	<ul style="list-style-type: none"><li>Problem Solving using Algorithms</li></ul>
3	03	<ul style="list-style-type: none"><li>Operators in C Language</li></ul>
4	04	<ul style="list-style-type: none"><li>Decision Statement: If-Else, Nested Loops</li></ul>
5	05	<ul style="list-style-type: none"><li>Decision Statement: Switch, Break and Continue</li></ul>
6	06	<ul style="list-style-type: none"><li>For Loop Structure, While and Do While Loop</li></ul>
7	07	<ul style="list-style-type: none"><li>Functions: Basics</li></ul>
8	08	<ul style="list-style-type: none"><li>Functions: Call by Value and Call by Reference</li></ul>
9		Mid Term Exam
10	09	<ul style="list-style-type: none"><li>Arrays: Basics</li></ul>
11	10	<ul style="list-style-type: none"><li>Arrays: Matrices</li></ul>
12	11	<ul style="list-style-type: none"><li>Strings: Basics and Manipulation</li></ul>
13	12	<ul style="list-style-type: none"><li>Pointers</li></ul>
14	13	<ul style="list-style-type: none"><li>Structures</li></ul>
15	14	
16	15	<ul style="list-style-type: none"><li>Handling Files in C</li></ul>
17	16	
18		Final Term Exam

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