INSTITUTION National University of Computers and Emerging Sciences

PROGRAM (S) TO BE EVALUATED BS Computer Science

A. Course Description

Course Code	CS-118
Course Title	Programming Fundamentals
Credit Hours	3+1
Prerequisites by Course(s) and Topics	None
Assessment Instruments with Weights (homework, quizzes, midterms, final, programming assignments, lab work, etc.)	Mid-1:10 Mid-2:10 Final:50 Quizzes: 10 Project: 10 Assignment: 10
Course Coordinator	M. Shahzad/Zain ul Hassan/Mr Basit/Musawwir/Atiya Jokhio/Nida
URL (if any)	
Current Catalog Description	
Textbook (or **Laboratory Manual** for Laboratory Courses)	Name: C How to Program - 7th Edition Authors: Paul Deitel, Harvey Deitel Publisher: Pearson Name: Problem Solving and Programming Concept - 9th Edition Authors: Maureen Sprankle , Jim Hubbard Publisher: Prentice Hall
Reference Material	Name: Working with C / Let us Author(s): Yashwant Kanetkar Publisher: BPB Publications Name: Waite Group's Turbo C - Programming for the PC Authors: Robert Lafore Publisher: SAMS

Course Goals	1. Getting students acquainted with problem understanding, modeling and solving. 2. Understanding the concept of Programming Languages. 3. Two major areas to be covered: i. Computation and problem solving ii. Implementation in C language. 4. Design and implement algorithms to solve real world problems.

Topics Covered in the Course, with Number of Lectures on Each Topic (assume 15-week instruction and one-hour lectures)

Week wise distribution	**Topics Covered**
Week 1	Algorithm analysis, problem modeling, Basic Flowchart and block diagram
Week 2	Continued
Week 3	Data Types, Basic programming with algorithm, flow chart, Operators, Input and Output
Week 4	Control structures: if-else, nested-if, Switch statements
Week 5	Loops, Nested Loops, 1 D Array
Week 6	Mid1 + Project Assignment
Week 7	Multiple subscripted arrays and strings
Week 8	Functions and Recursion, Introduction to Pointers (Theory classes)
Week 9	Lab MID More on Pointers Dynamic Memory Allocation
Week 10	Pointers functions and void pointers
Week 11	Mid2
Week 12	Introduction to Structures, Structure array and pointer to structures, Union (Optional)
Week 13	File Processing
Week 14	File Processing(Binary and Text files), Revision(structures, Pointers, Arrays)
Week 15	Revision, Final Lab Exam
Week 16	Project evaluations

Programming in the Course	**Assignments Done**	Assignment related to Functions, Arrays, Pointers , Structures, Dynamic Memory and File Processing will be done