



AGHOREKAMINI PRAKASHCHANDRA MAHAVIDYALAYA



ADD ON COURSE ON

Basics on Computer Programming

ORGANIZED BY

DEPARTMENT OF MATHEMATICS

IN ASSOCIATION WITH

**IQAC, AGHOREKAMINI PRAKASHCHANDRA
MAHAVIDYALAYA**

COURSE TITLE: Basics on Computer Programming

COURSE DURATION: 36 HOURS (FROM 01.12.2019 TO 27.12.2019)

COURSE OFFERED BY: Dept. of **Mathematics**,
A.K.P.C Mahavidyalaya
Bengai, Hooghly

PARTICIPATING TEACHERS:

1. Dr. SOURAV HALDAR (Assistant Professor)
2. Dr. SAMIR KUMAR NANDY (Associate Professor)
3. KUNTAL MUKHERJEE (SACT)

COURSE COORDINATOR: KUNTAL MUKHERJEE

SYLLABUS:

Introduction to Computing: Introduction, Art of Programming through Algorithms and Flowcharts. Overview of C: History and importance of C, Basic structure of C program, executing a C program. Constants, Variable and Data Types: Introduction, Character Set, C Tokens, Keywords and Identifiers, Constants, Variables, Data Types, Declaration of Variables, Assigning Values to Variables, Defining Symbolic Constants. Operators and Expressions: Introduction, Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators, Increment and Decrement Operators, Conditional Operator, Special Operators, Arithmetic Expressions, Evaluation of Expressions. Decision Making and Branching: Introduction, Decision Making with IF Statement, Simple IF Statement, the IF-ELSE Statement, Nesting of IF-ELSE Statements, The ELSE IF Ladder, The Switch statement, The goto statement. Decision Making and Looping: Introduction, The while Statement, The do statement, The for statement, Jumps in LOOPS. One-dimensional Arrays, Declaration of One-dimensional Arrays, Initialization of One-dimensional Arrays, Example programs- Bubble sort, Selection sort, Linear search, Binary search, Two-dimensional Arrays, Declaration of Two-dimensional Arrays, Initialization of Two-dimensional Arrays, Example programs-Matrix Multiplication, Transpose of a matrix. Pointers: Introduction, Declaring Pointer Variables, Initialization of Pointer variables, accessing a Variable through its Pointer, Pointer Expressions, Pointer Increments and Scale Factor. Introduction, Defining a structure, declaring structure variables, accessing structure members, structure initialization, array of structures.

MODULES:

UNIT- I

Introduction to Computing, Constants, Variable and Data Types, Managing Input and Output Operations, Operators and Expressions.

(1 h. lecture, 1 h. practical)

UNIT- 2

Decision Making and Branching, Decision Making and Looping.

(4 h. lecture, 4 h. practical)

UNIT- 3

Arrays, Character Arrays and Strings.

(4 h. lecture, 5 h. practical)

UNIT- 4

User-defined Functions, Pointers.

(3 h. lecture, 4 h. practical)

UNIT- 5

Structures, File Management in C.

(4 h. lecture, 6 h. practical)

PROGRAM OUTCOME:

After course completion the students will have the following program outcomes:

- Understanding a functional hierarchical code organization.
- Ability to define and manage data structures based on problem subject domain.
- Ability to work with textual information, characters and strings.
- Ability to work with arrays of complex objects.
- Understanding a concept of object thinking within the framework of functional model.
- Understanding a concept of functional hierarchical code organization.
- Understanding a defensive programming concept. Ability to handle possible errors

during program execution.

COURSE OUTCOME:

CO – 1: Illustrate the flowchart and design an algorithm for a given problem and to develop IC programs using operators.

CO – 2: Develop conditional and iterative statements to write C programs.

CO – 3: Exercise user defined functions to solve real time problems.

CO - 4: Inscribe C programs that use Pointers to access arrays, strings and functions.

CO - 5: Exercise user defined data types including structures and unions to solve problems.

CO - 6: Inscribe C programs using pointers and to allocate memory using dynamic memory management functions.

CO - 7: Exercise files concept to show input and output of files in C.

MODE OF EVALUATION:

After the completion of course, Written examination will be taken for 20 Marks and a Practical examination (60 Marks) & Viva (20 Marks) will be conducted. On the basis of marks obtained for written examination, practical examination and viva, the results will be prepared. The gradation system for the declaration of results will be as follows:

Grading system

Level	Excellent	Very Good	Good	Above Average	Average	Below Average	Poor	Fail
Grade	A+	A	B+	B	C	D	E	F
Marks range	90-100	80-89	70-79	60-69	50-59	40-49	33-40	0-32