

# IIPM SCHOOL OF ENGINEERING AND TECHNOLOGY

**LESSON PLAN: 2022-23**

# Sub: Computer Application (Th.1b)

**Course : Diploma Semester: 1st Duration : 60 hours**

**Faculty name : ASISH KUMAR DASH**

**SYLLABUS**

### Topic wise distribution of periods

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| **Sl. No.** | **Topics** | **Periods** |
| 1 | Computer Organisation | 05 |
| 2 | Computer Software | 07 |
| 3 | Computer Network and Internet | 08 |
| 4 | File Management and Data Processing | 05 |
| 5 | Problem Solving Methodology | 05 |
| 6 | Overview of C Programming language | 15 |
| 7 | Advanced features of C | 15 |
|  | **TOTAL** | **60** |

1. **COMPUTER ORGANISATION**

Introduction to Computer Evolution of Computers Generation of Computers Classification of Computers

Basic Organisation of Computer (Functional Block diagram) Input Devices, CPU & Output Devices.

Computer Memory and Classification of Memory

### COMPUTER SOFTWARE

Software concept, System software, Application software Overview of Operating System Objectives and Functions of O.S ,

Types of Operating System: Batch Processing, Multiprogramming, Time Sharing OS Features of DOS, Windows and UNIX

Programming Languages Compiler, interpreter Computer Virus Different Types of computer virus

Detection and prevention of Virus Application of computers in different Domain

### COMPUTER NETWORK AND INTERNET

Networking concept, Protocol, Connecting Media, Date Transmission mode Network Topologies, Types of Network

Networking Devices like Hub, Repeater, Switch, Bridge, Router, Gateway & NIC Internet Services like E-Mail, WWW, FTP, Chatting, Internet Conferencing, Electronic Newspaper & Online Shopping

Different types of Internet connectivity and ISP

### FILE MANAGEMENT AND DATA PROCESSING

Concept of File and Folder

File Access and Storage methods. Sequential, Direct, ISAM Data Capture, Data storage

Data Processing and Retrieval

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Data Processing and Retrieval

### PROBLEM SOLVING METHODOLOGY

Algorithm, Pseudo code and Flowchart Generation of Programming Languages Structured Programming Language

Examples of Problem solving through Flowchart

### OVERVIEW OF C PROGRAMMING LANGUAGE

Constants, Variables and Data types in C Managing Input and Output operations. Operators, Expressions, Type conversion & Typecasting

Decision Control and Looping Statements (If, If-else, If-else-if, Switch, While, Do- while, For, Break, Continue & Goto)

Programming Assignments using the above features.

### ADVANCED FEATURES OF C

Functions and Passing Parameters to the Function (Call by Value and Call by Reference) Scope of Variables and Storage Classes

Recursion Function and Types of Recursion

One Dimensional Array and Multidimensional Array String Operations and Pointers

Pointer Expression and Pointer Arithmetic Programming Assignments using the above features. Structure and Union (Only concepts, No Programming)

**Objectives**: The students will get to know about the fundamentals of computer. They will get acquainted with various components of computer hardware, software etc. Idea on Role of operatingsystem and its usability will also be known. Knowledge on word processing, electronic spreadsheet, presentation software and Internet will also be acquired. The students will be given brief knowledge about Programming methodology and C programming.

**Learning Outcome:** It enables the student in acquiring of knowledge and application of Computer in different domain.

It will make the student aware of in depth knowledge regarding different project using C- programming languages.

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| **Sl.no** | UNIT | **Pro pose d Wee k for Teac**  **hing** | **Lecture No** | **Sub Topic** | **Important Teaching Points** | **Content Source** |
| 1 | 1 | 1st | 1 | Introduction to computer and evolution of  computer | Fundamental conepts | Computer Fundamentals and Programming in C by Reema Thareja |
| 2 | 2 | Generation of computer | Types of generation first, second etc | Computer Fundamentals and Programming in C  by Reema Thareja |
| 3 | 3 | Classification of computer | Types of computer analog digital hybrid | Computer Fundamentals and Programming in C  by Reema Thareja |
| 4 | 4 | Computer organization and input output  devices | Block diagram inpt device and output device with examples | Computer Fundamentals and Programming in C by Reema Thareja |

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| 5 |  | 2nd | 1 | Computer Memory and Classification of Memory | Primary memory secondary memory etc. | Computer Fundamentals and Programming in C by Reema Thareja |
| 6 | 2 | 2 | Software concept, System software, Application  software | Kinds of software system software application software | Computer Fundamentals and Programming in C  by Reema Thareja |
| 7 | 3 | Overview of Operating System Objectives and  Functions of O.S | Definition memory management resource management input and output device management | Computer Fundamentals and Programming in C by Reema Thareja |
| 8 | 4 | Types of Operating System: Batch Processing, Multiprogramming,  Time Sharing OS | Different types based on processor, job etc  Real time os | Computer Fundamentals and Programming in C by Reema Thareja |
| 9 | 3rd | 1 | Features of DOS,  Windows and UNIX | Features of DOS window7, window vista etc | Computer Fundamentals  and Programming in C by Reema Thareja |
| 10 | 2 | Programming Languages Compiler,  interpreter | Languages of computer | Computer Fundamentals and Programming in C by Reema Thareja |
| 11 | 3 | Computer Virus Different Types of computer virus Detection and  prevention of Virus | Definition types functions and prevention | Computer Fundamentals and Programming in C by Reema Thareja |
| 12 | 4 | Application of computers in different Domain | Education,business,medical,rese arch etc | Computer Fundamentals and Programming in C by Reema Thareja |
| 13 | 3 | 4th | 1 | Networking  concept, Protocol, Connecting Media | FTP,HTTP etc  Wired and wireless | Computer Fundamentals  and Programming in C by Reema Thareja |
| 14 | 2 | Date Transmission mode Types of  Network | Simplex half duplex full duplex | Computer Fundamentals and Programming in C  by Reema Thareja |
| 15 | 3 | Network Topologies | Bus mesh star tree etc | Computer Fundamentals  and Programming in C by Reema Thareja |
| 16 | 4 | Networking Devices | Hub switch etc | Computer Fundamentals and Programming in C  by Reema Thareja |
| 17 | 5th | 1 | Internet Services like E-Mail, WWW, FTP,  Chatting, | Application of internet | Computer Fundamentals and Programming in C by Reema Thareja |
| 18 | 2 | Internet Conferencing, Electronic Newspaper &  Online Shopping | Application of internet | Computer Fundamentals and Programming in C by Reema Thareja |
| 19 | 3 | Different types of  Internet connectivity and | Types of connection Dial up, ASDL etc | Computer Fundamentals  and Programming in C by Reema Thareja |

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| 20 | 4 | Revision | Overall review |  |
| 21 | 4 | 6th | 1 | Concept of File and Folder | Fundamental concept | Computer Fundamentals and Programming in C  by Das &Mallick |
| 22 | 2 | File Access and Storage methods. Sequential, Direct,  ISAM | Different methods Direct and sequential | Computer Fundamentals and Programming in C by Das &Mallick |
| 23 | 3 | Data Capture, Data storage | Bar code reader MICR etc | Computer Fundamentals and Programming in C  by Das &Mallick |
| 24 | 4 | Data Processing and Retrieval | Retrieval of data | Computer Fundamentals and Programming in C  by Das &Mallick |
| 25 | 7th | 1 | Previous year  question discussion | Discussion of 1 year questions  with answers |  |
| 26 | 5 | 2 | Algorithm, Pseudo code | Char. Of algorithm Concept on pseudocode | Computer Fundamentals and Programming in C  by Das &Mallick |
| 27 | 3 | Flowchart | Different symbols used in flowchart | Computer Fundamentals and Programming in C  by Das &Mallick |
| 28 | 4 | Generation of  Programming Languages | Types of generations | Computer Fundamentals  and Programming in C by Das &Mallick |
| 29 | 8th | 1 | Structured  Programming Language | Fundamental concepts | Computer Fundamentals  and Programming in C by Das &Mallick |
| 30 | 2 | More examples on Flowchart | Questions on flowchart | Computer Fundamentals and Programming in C  by Das &Mallick |
| 31 | 6 | 3 | Constants,  Variables and Data types in C | Introduction to c programming | Computer Fundamentals  and Programming in C by Reema Thareja |
| 32 | 4 | Managing Input and Output  operations | Different i/p & o/p operation | Computer Fundamentals and Programming in C  by Reema Thareja |
| 33 | 9th | 1 | Operators, Expressions | Types of operator | Computer Fundamentals  and Programming in C by Reema Thareja |
| 34 | 2 | Type conversion & Typecasting | Different versions of conversion | Computer Fundamentals  and Programming in C by Reema Thareja |
| 35 | 3 | Decision Control and Looping  Statements (If, If- else, ) | Concepts on looping | Computer Fundamentals and Programming in C by Reema Thareja |
| 36 | 4 | If-else-if, Switch, | Concepts of switch | Computer Fundamentals and Programming in C  by Reema Thareja |
| 37 | 10th | 1 | While, Do- while | Concepts on while and do while loop | Computer Fundamentals and Programming in C  by Reema Thareja |
| 38 | 2 | For, Break | Examples on for loop and break statement | Computer Fundamentals and Programming in C  by Reema Thareja |

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| 39 |  |  | 3 | Continue & Goto | Introduction | Computer Fundamentals  and Programming in C by Reema Thareja |
| 40 | 4 | Programming on For LOOP | Some examples | Computer Fundamentals and Programming in C  by Reema Thareja |
| 41 | 11th | 1 | More Examples on Programmings | Some examples | Computer Fundamentals and Programming in C  by Reema Thareja |
| 42 | 2 | More Examples on Programmings | Some examples | Computer Fundamentals and Programming in C  by Reema Thareja |
| 43 | 3 | More Examples on Programmings | Some examples | Computer Fundamentals  and Programming in C by Reema Thareja |
| 44 | 4 | Previous year questions | Discussion of 1 year questions with answers | Computer Fundamentals and Programming in C  by Reema Thareja |
| 45 | 12th | 1 | Previous year questions | Discussion of 1 year questions with answers | Computer Fundamentals and Programming in C  by Reema Thareja |
| 46 | 7 | 2 | Introduction to Functions | Fundamental concepts | Computer Fundamentals  and Programming in C by Reema Thareja |
| 47 | 3 | Passing Parameters to the Function Call by  Value | Concepts on passing by value | Computer Fundamentals and Programming in C by Reema Thareja |
| 48 | 4 | Passing Parameters to the Function Call by  Reference | Concepts on passing by reference | Computer Fundamentals and Programming in C by Reema Thareja |
| 49 | 13th | 1 | Scope of Variables | Introduction | Computer Fundamentals  and Programming in C by Reema Thareja |
| 50 | 2 | Storage Classes | Concepts on storage classes | Computer Fundamentals and Programming in C  by Reema Thareja |
| 51 | 3 | Recursion Function and Types of  Recursion | Types of function | Computer Fundamentals and Programming in C by Reema Thareja |
| 52 | 4 | One Dimensional Array | Concepts on array | Computer Fundamentals and Programming in C  by Reema Thareja |
| 53 | 14th | 1 | Multidimensional Array | Concepts on multi dimensional array | Computer Fundamentals  and Programming in C by Reema Thareja |
| 54 | 2 | String Operations | Different operation on string | Computer Fundamentals and Programming in C  by Reema Thareja |
| 55 | 3 | Pointers | Concepts on pointer | Computer Fundamentals and Programming in C  by Reema Thareja |
| 56 | 4 | Pointer Expression | Types of pointer | Computer Fundamentals and Programming in C  by Reema Thareja |

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| 57 |  | 15th | 1 | Pointer Arithmetic Programming | Programming concepts | Computer Fundamentals  and Programming in C by Reema Thareja |
| 58 | 2 | Structure and Union | Only definition | Computer Fundamentals and Programming in C  by Reema Thareja |
| 59 | 3 | Previous year questions | Discussion of 1 year questions with answers | Computer Fundamentals and Programming in C  by Reema Thareja |
| 60 | 4 | Previous year questions | Discussion of 1 year questions with answers | Computer Fundamentals and Programming in C  by Reema Thareja |

**Text book suggested :** Computer Fundamentals and Programming in C by Reema Thareja Computer Fundamentals and Programming in C by Das &Mallick

Signature of

Faculty Member Principal