

Lesson Plan (2025-26)

Department of Computer Science

Name of the Teacher:-Dr. Rajinder Singh & Dr. Poonam Kumari

Class:-B.Sc. (NM)

Subject:-Programming in C (Major)

August – Basics of C (Unit I)

Focus: Introduction, program structure, data types, input/output

Week 1–2:

- History, importance & structure of C program
- Character set, constants, variables, identifiers & keywords
- Data types, symbolic constants, assignment statements

Week 3–4:

- Input/Output: `scanf()`, `printf()`
- Input functions: `getchar()`, `gets()`, `getch()`, `getche()`
- Output functions: `puts()`, `putchar()`

Practical Exercises:

- Write a program to print name, age, etc.
 - Simple calculator using `scanf()` and `printf()`
 - Character I/O programs
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September – Operators & Expressions (Unit II)

Focus: Operators, expressions, decision making, loops

Week 1–2:

- Arithmetic, relational, logical, bitwise & unary operators
- Operator hierarchy & evaluation of expressions
- Conditional operators, special operators

Week 3–4:

- Type casting & conversion
- Decision making: `if`, `if-else`, nested `if`, `else-if` ladder
- Switch-case, `break`, `continue`, `goto`
- Looping: `for`, `while`, `do-while`

Practical Exercises:

- Largest of three numbers
 - Prime number check
 - Factorial using loop
 - Demonstration of `if-else` ladder
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October – Arrays, Functions & Strings (Unit III)

Focus: Arrays, functions, string handling

Week 1–2:

- One-dimensional arrays: declaration, initialization, memory representation
- Two-dimensional arrays: declaration, initialization, memory representation

Week 3–4:

- Functions: definition, prototype, arguments (call by value, call by reference)
- Recursive functions
- Strings: declaration, initialization, string I/O
- String functions: `length`, `copy`, `compare`, `concatenate`, `substring` search

Practical Exercises:

- Average of marks using single-dimensional array
 - Matrix addition & multiplication
 - Recursive factorial & Fibonacci
 - String palindrome check, `substring` search
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November – Pointers & Structures (Unit IV)

Focus: Pointers, arrays with pointers, structures & unions

Week 1–2:

- Pointers: declaration, initialization, accessing values
- Pointers & arrays
- Pointer arithmetic

Week 3–4:

- Structures: definition, declaration, initialization
- Accessing structure members, array of structures
- Unions: definition, difference between structure & union

Practical Exercises:

- Pointer to swap numbers
 - Array of structures (student details)
 - Union demonstration (memory sharing)
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December – Practicum & Revision (Unit V)

Focus: Practical problems + revision for exam

Week 1–2:

- Radius & circumference of a circle
- Biggest of three numbers
- Prime number check
- Palindrome number

Week 3–4:

- Continuous number input until 999 (sum of positives only)
- Percentage of marks with grade (using `if-else ladder`)
- Roots of quadratic equation
- Revision of all topics & sample question papers

Lesson Plan (2025-26)

Department of Computer Science

Name of the Teacher:-

Class:-B.A./B.Sc. (M & NM)

Subject:-Fundamentals of Computer Science (MDC)

August – Computer Fundamentals (Unit I)

Focus: Basics of computers, components, applications, software

Week 1–2:

- Evolution of computers through generations
- Characteristics, strengths & limitations of computers
- Classification of computers

Week 3–4:

- Functional components of a computer system
- Applications of computers in various fields
- Types of software: System, Application, Utility

Practical Tasks:

- Identify various computer hardware components
- List system vs application software with examples
- Demonstration of utility software (antivirus, compression tools)

September – Memory Systems & I/O Devices (Unit II)

Focus: Memory hierarchy, storage devices, input/output devices

Week 1–2:

- Concept of bit, byte, word, nibble
- Storage locations, addresses, measuring storage capacity, access time

- Memory hierarchy: RAM, ROM, PROM, EPROM

Week 3–4:

- Secondary memory: Magnetic tapes, hard disk, optical disks, flash memory
- I/O Ports, device controller, device driver
- Input devices: keyboard, mouse, touchpad, scanner, joystick, biometric devices
- Output devices: monitor, printer (inkjet, laser, dot-matrix), plotter

Practical Tasks:

- Demonstration of input & output devices
 - Comparison of primary vs secondary memory
 - Visit to computer lab to observe I/O ports & storage devices
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October – Operating System (Unit III)

Focus: Basics & functions of OS, desktop operations

Week 1–2:

- Definition, functions & features of an Operating System
- Types of OS: Single-user, Multi-user, Batch, Real-time

Week 3–4:

- Windows OS: icons, folders, files, start button, taskbar
- Desktop operations: My Computer, My Documents, Recycle Bin
- Windows Explorer, Control Panel

Practical Tasks:

- Hands-on: File creation, renaming, moving, deleting
 - Customizing desktop, using Control Panel settings
 - Demonstration of shortcuts & taskbar customization
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November – Internet & E-mail (Unit IV)

Focus: Internet basics, communication, email usage

Week 1–2:

- Introduction to networks & internet, history
- Modes of connecting to internet
- Web browsers & search engines

Week 3–4:

- E-mail: concepts, advantages, disadvantages
- User IDs, passwords, e-mail addresses
- Message composition, attachments, CC/BCC, mailbox features

Practical Tasks:

- Browsing & using search engines effectively
 - Creating & managing an email account
 - Sending professional emails with attachments
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December – Practicum + Revision (Unit V)

Focus: Practical applications & exam preparation

Week 1–2:

- OS basics & functionalities
- Identifying hardware components
- Understanding software classification
- Using internet for academic tasks

Week 3–4:

- E-mail communication (hands-on practice)
- Revision of all theory units (I–IV)
- Mock practical + viva preparation

Lesson Plan (2025-26)

Department of Computer Science

Name of the Teacher:-Dr. Rajinder Singh & Dr. Poonam Kumari

Class:-B.Sc. (NM)

Subject:-Basics of Computer Science (Minor)

August – Unit I: Introduction to Computers (4 Hours)

Focus: Basics, history, components

Week 1–2:

- Definition of computers, history & generations
- Characteristics of computers
- Classification of computers

Week 3–4:

- Fundamental block diagram of computer
- Components: CPU, Input Unit, Output Unit

Practical Work:

- Identify parts of a computer system
- Draw block diagram of a computer system
- Basic startup/shutdown operations

September – Unit II: Software (4 Hours)

Focus: Types of software, languages, translators

Week 1–2:

- Software: Definition & types (system, application, utility)
- Examples of each type

Week 3–4:

- Types of computer languages: Machine, Assembly, High-level
- Translators: Assembler, Interpreter, Compiler

Practical Work:

- Exploring installed software on lab PCs (system & application)
 - Demonstration of utility software (antivirus, compression tools)
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October – Unit III: Operating Systems (4 Hours)

Focus: OS basics + Windows operations

Week 1–2:

- Types & functions of operating systems
- Introduction to Windows OS

Week 3–4:

- Windows interface: desktop, taskbar, icons, start menu
- File/folder operations: creating, renaming, deleting, copying, moving
- Date & time setting, opening & closing applications

Practical Work:

- Hands-on: File management in Windows
 - Using Control Panel for personalization & settings
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November – Unit IV: Networking & Internet (4 Hours)

Focus: Networking basics & web browsing

Week 1–2:

- Concept of networking, LAN, MAN, WAN
- Data transmission media (wired & wireless)

Week 3–4:

- Introduction to Internet & WWW
- Web browsers, search engines, bookmarks, downloads

- Basics of email (creating account, composing, sending, attachments)

Practical Work:

- Accessing internet, using search engines effectively
 - Creating and using an email account
 - Exploring popular web browsers
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December – Unit V: Practicum + Revision (25 Hours)

Focus: Hands-on practice + exam preparation

Week 1–2:

- Dismantling the system unit (identifying internal components)
- Exploring utilities like Regedit, Control Panel, Memory Partitioning
- Date & Time setting, window tools

Week 3–4:

- File/folder operations (create, delete, rename, move, copy)
- Comprehensive revision of Units I–IV
- Mock viva & practical test preparation