

# GOVERNMENT DEGREE COLLEGE BARAMULLA

SEMESTER 2<sup>nd</sup>

MAJOR/MINOR

**Subject: Information Technology**

TITLE: Programming in C

**Code: BIT22C201**

Credit: 6 Credits (4 Theory +2 Practical)

Contact Hours: 64 Th + 64 Pr

## **Part I: Theory (4 Credits)**

Course Objectives:

- *Introduce basic concepts of programming language.*
- *To understand the structure of programs.*
- *To understand the way of writing and creating programs.*

### UNIT I

**Computer Languages:** Generation of Languages, Translators- Assemblers, Interpreters, Compilers, Algorithm, Pseudo-code, Flowcharts- rules & symbols, Structured Programming concepts, various techniques of programming, Use of programming. Introduction to 'C', importance of C.

**C Fundamentals:** Character set, Identifiers and keywords, Data Types, constants, variables Operators: Operators: Arithmetic operators, Unary operators, Relational operators, Logical operators.

### UNIT II

**Storage Class in C:** Automatic, Register, static, external. Scope and Life of a variable.

**Control Statements:** if statement, if-else statement, nested if statement, goto statement, switch-case statement

**Loops:** While, do-while and for loops, nested loops, break, continue, exit, comma operator.

**Arrays:** Defining and accessing, one dimensional and two-dimensional arrays. Multi-dimensional arrays. Arrays and strings – standard string functions.

### UNIT III

**Functions:** Defining function, accessing function, passing arguments to functions, function prototype, recursion, passing array to a function

**Pointers:** Pointer declaration, operators and pointers, passing pointer to a function, pointer and one-dimensional arrays, array of pointers, Dynamic memory allocation

### Unit IV

**Structures and unions:** Purpose and usage of structures, declaring structures, assigning of structures, Overview of union.

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**File Management:** Introduction to ASCII files, binary files, defining and opening a file, closing a file. Reading from and writing to a file. File operations like storing, retrieving and updating a file, Random access file.

## **Part II: Laboratory Course (2Credits)**

*Course Objectives:*

- *To write various algorithms and design flowcharts*
- *To write various C programs*

*Learning Outcomes:*

- *Implementation of Algorithms and flowcharts in creation of various Programs*

UNIT I:

- Write various algorithms and designing flowcharts using various symbols.

UNITII:

- Write various programs illustrating the use of various storage classes.
- Write programs to understand the use of control structures (if, if-else, nested if-else, goto statement, switch statement, break )
- Write programs to use loops(for, while, do-while)
- Write programs to understand use of arrays.

UNIT III:

- Write programs to understand the use of functions
- Write programs to understand concept of call by value and call by reference.
- Write programs to show how arrays are passed to functions.
- Write programs to show use of pointers.
- Write program to understand concept of dynamic memory allocation.

UNIT IV:

- Write programs to understand use of struct and unions.
- Write programs to understand working with files(opening, closing, reading, writing)
- Write programs to understand the concept of working with files.

**Textbooks/Reference Books:**

1. *Let US C by Yashavant Kanetkar, BPB Publication.*
2. *C: The Complete Reference by Herbert Schildt; Mc Graw Hill Education.*
3. *Programming in C by Reema Thareja; Oxford Publication*
4. *C in depth by SK srivastava and Deepali Srivastava, BPB publications*
5. *Programming in ANSI C , E Balagurusamy*

# GOVERNMENT DEGREE COLLEGE BARAMULLA

Semester 2<sup>nd</sup>

Skill Enhancement Course

Subject: Information Technology

Title: Basics of Information Technology (II)

Code: BIT22S202

Credit: 4 Credit (2 Theory + 2Practicles)

Teaching Hours: 32 hours + 64 Practices

*Objectives:*

- *To provide basic concept of communication , network and internet*
- *To provide the basic knowledge for creating html documents using various tags.*

## Part I: Theory (2 Credits)

### UNIT I

#### Introduction to Internet and WWW

Communication: components, modes and types of communication. Computer Network and types. Internet: Concept of Internet & WWW, Applications of Internet, Website Address and URL, Introduction to IP Address, ISP and Role of ISP, Internet Protocol, Modes of Connecting Internet (Hot Spot, Wi-Fi, LAN Cable, Broad Band, USB Tethering), Identifying and uses of IP/MAC/IMEI of various devices, Popular Web Browsers (Internet Explorer/Edge, Chrome, Mozilla Firefox, Opera etc.), Exploring the Internet , Surfing the web, Popular Search Engines, Searching on Internet, Downloading Web Pages, Printing Web Pages. Opening e-mail account, creating and sending, replying, forwarding, searching and attaching files with e-mail and e-mail signature.

### UNIT II

#### HTML BASICS

Introduction, Basic Structure of HTML, Head Section and Elements of Head Section, Formatting Tags: Bold, Italic, Underline, Strikethrough, Div, Pre Tag Anchor links and Named Anchors Image Tag, Paragraphs, Comments, Tables: Attributes –(Border, Cell padding, Cell spacing, height, width), TR, TH, TD, Rowspan, Colspan Lists : Ordered List , Unordered List , Definition List, Forms, Form Elements, Input types, Input Attributes, Text Input Text Area, Dropdown, Radio buttons , Check boxes, Submit and Reset Buttons Frames: Frameset, nested Frames.

## Part II: Laboratory Course(2Credits)

*Course Objectives:*

- *To learn how to get connected over network, how to connect various devices over network,*
- *To understand and learn the concept of e-mails.*

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- *Understand implementation of html tags for webpage designing.*

## UNIT I:

- Identifying and connecting various devices.
- Usage of various web browsers.
- Creating e-mails
- Sending, replying, forwarding e-mails
- Attaching various types of files with e-mails while communicating or sending.
- How to use signature in e-mails

## UNITII:

Using html tags :

- Creating basic structure of html document.
- Using various html tags to design web page.
- Insertion of various links ,images in WebPages.
- How to insert tables .
- Creating ordered and unordered lists .
- How to create forms in html.
- How to use various form elements

### *Reference Books/Study Material :*

- 1. HTML5, Black Book, Kagent Learning Solution Inc, 2014*
- 2. Mastering HTML, CSS & JavaScript Web Publishing by Lemay Laura, BPB publications*
- 3. HTML & CSS: The Complete Reference by Thomas Powell*
- 4. Web Design, McGraw –hill 5. Learning Angular JS by Brad Dayley, Pearson*

# Government Degree College, Baramulla

Semester: 1<sup>st</sup>

Major/Minor1

Subject: Information Technology

Title: Basics of Information Technology  
Credit: 03 (Theory 03)

Code: BIT22M103  
Contact Hours: 48

## ***Unit I(Basics of IT)***

Data, Information, Information Processing, Characteristics of Information, Information system, Computer, Characteristics of Computers, Evolution of Computers, Generation of computers, Types and Classification of computers. Application of computers. Block Diagram of a computer, Description of Input Unit, Output Unit, Storage Unit, Central Processing Unit, Arithmetic Logic Unit, Control Unit.

Learning to use a computer: Concept of booting :types of booting, Using Mouse, Keyboard, Understanding Desktop, Folders, Files, Creating Folders, Saving Files, Using MS Paint, Renaming, Cut-Copy- Paste, Connecting a printer, scanner, mobile phone.

## **Unit II (Software Concepts and Office)**

Software, Relationship between Hardware and Software, Types of Software: System Software (Operating Systems, Language Translators, Utility Programs, Communications Software) Functions of System Software, Application Software (Word Processing, Spreadsheet, Database, Graphics Personal Assistance, Education, Entertainment Software) Firmware.

Using MS Word: Designing simple documents, Headings, Font, Styles, Bullets, Inserting Images, SmartArt, Tables, Setting Page Layout, Margins, Gutter, Headers and Footers, Printing, Saving as PDF.

## **Unit III (Office Tools)**

**Making small presentations:** Basics of presentation, creating presentations, preparation and presentation of slides, slide show, taking printouts of presentations /handouts.

**Using spreadsheet:** Basics of spreadsheet, manipulation of cells, formulas and functions, editing of spreadsheet, printing of spreadsheet.

Reference Books:

1. Mansfield Ron, "Working in Microsoft Office", Tata McGraw Hills.
2. Perry G, "MS Office2007", Pearson Education.
3. Sanders, D.H., "Computer Today ", Mc-Graw Hill, 1988.

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4. Suresh K. Basandra, "Computers Today", Galgotia Publications Pvt. Ltd.
5. Raja Raman V., "Fundamental of Computers" (4th edition.), Prentice Hall of India, New Delhi.
6. Trainer T., et al, "Computers", McGraw Hill. 7. Norton, Peter, "Introduction to Computers Mc-Graw-HillPublications.
7. Dr.WaseemAkram, "Basics of Information Technology", Notion Publications,2022
8. Computer Fundamentals ,PK Sinha