

SARDAR PATEL UNIVERSITY
B.Sc. Computer Science III Semester
US03CCSC21 (Fundamentals of Computer Programming Using C)
Effective from June-2019

Credits : 4
Lectures per week : 4
University examination duration: 3 Hours
All units carry equal weightage.

Unit 1	Development of Algorithms, Flow Charts and Basics of C Language <ul style="list-style-type: none"> - Concept of an algorithm and a flow chart, need and definition - Symbols used to draw a flow chart - Typical (primitive) examples of flow charts and algorithms - Introduction to Translators and editors and details about Turbo C editor - History and Importance of C - Basic Structure of C Programming - Problem analysis - Variables, expressions & manipulation - Data types and various operators - I/O statements, Assignment statements
Unit 2	Logic Development, Structured Programming, Arrays <ul style="list-style-type: none"> - Formatted I/O statements - Control strategies, Conditions - Loop statements - Method of structured programming - Arrays
Unit 3	Strings, Library Functions and User-Defined Functions <ul style="list-style-type: none"> - Common standard library functions - String handling. - Working with functions - Calling functions, passing arguments - User-defined functions
Unit 4	Usage of Pointers <ul style="list-style-type: none"> - Introduction and usage of pointers - Declaration, initialization and dereferencing of pointer variables - Pointers and addresses, Pointer arithmetic - Pointers and function arguments - Returning multiple values through pointers, Dynamic memory allocation - Pointers and arrays

REFERENCE BOOKS:

- Balaguruswami: Programming in ANSI C., Tata McGraw Hill Publication.
- Cooper H. & Mullish H: The Spirit of C, Jaico Publication House, New Delhi.
- Kernighan B., Ritchie D.: The C Programming Language, Prentice Hall.

SARDAR PATEL UNIVERSITY
B.Sc. Computer Science III Semester
US03CCSC22 (Web Application Development – I)
Effective from June-2019

Credits : 4
Lectures per week : 4
University examination duration: 3 Hours
All units carry equal weightage.

Unit 1	Introduction to Internet and Basics of HTML <ul style="list-style-type: none"> - Introduction to Internet and Basics of HTML - Services provided by the Internet (email, HTTP, FTP, Telnet, WWW) - Basic terminology and concepts (URL, Webpage, Website, Web servers, Web browsers, Search Engines) - Components of a browser window - Use of menus and toolbar buttons - Security and privacy precautions - Introduction to HTML, HTML tags, Structure of HTML document, - Text and Paragraph Formatting, ordered and unordered lists
Unit 2	Web Page Designing, Frames and Forms <ul style="list-style-type: none"> - Hyperlink, image tag - HTML tables - Frames, framesets, nested framesets - Designing HTML forms - Webpage layout - Multimedia tags (audio, video), Webpage layout
Unit 3	Introduction to HTML5 and DHTML <ul style="list-style-type: none"> - HTML5: HTML5 new elements ! Doctype, meta, Input Controls (number, date, time, calendar, ranges) - HTML5 semantics elements: header, footer, article, section. - HTML5 graphics elements: SVG, Canvas - What is DHTML - Uses / Applications of DHTML, Components of DHTML
Unit 4	Cascading Style Sheet <ul style="list-style-type: none"> - Introduction of Cascading Style Sheet (CSS) - Introduction Way of Specifying Style Inline Internal - Cascading Style Sheet Attributes (font, color, text, background, border, margin, list) - Implement of external style sheet - Advanced CSS (Rounded Corners, Shadows, Text effects, Animations, 2D and 3D transforms)

REFERENCE BOOKS:

- Ivan Bay ross, “Web Enabled Commercial Applications Development using HTML, DHTML, Java script, Perl CGI”, BPB, 2004
- Introduction to Internet and HTML scripting 2nd edition, Bhaumik Shroff.
- Douglas E Comer: The Internet, PHI, Second Edition, May 2000

SARDAR PATEL UNIVERSITY
B.Sc. Computer Science III Semester

US03CCSC23 (Fundamentals of Computer Programming Using C - Lab)

(Practical)
Effective from June-2019

Part – I

Credits : 2
No. of laboratory hours per week : 4

University examination duration : 2 Hours

- **Practical Based on US03CCSC21**

Part – II

Credits : 2
No. of laboratory hours per week : 4

University examination duration : 2 Hours

- **Practical Based on US03CCSC22**

SARDAR PATEL UNIVERSITY
B. Sc. Computer Science III Semester
Course: US03SICT21 Information and Communication Technology - I
Effective from June-2019

Credits : 2
Lectures per week : 2
University examination duration: 2 Hours
All units carry equal weightage.

Unit 1	Basics of Computer System <ul style="list-style-type: none">- Introduction to Computer System and its characteristics- Basic Terminology: Hardware, Software, Firmware- Components of general purpose computer system: I/O devices, CPU, Memory- Generations of computer languages- Introduction to Operating System: Windows, Linux
Unit 2	Input and Output Devices <ul style="list-style-type: none">- Input Devices: Keyboards, Numeric keypads, Pointing Devices (Mouse, touch pad), Joysticks, Touch screen, Scanner, Sensor Magnetic strip reader, Microphone, Barcode reader, Webcam, Light pen- Output Devices: Monitors (CRT, TFT, LCD), Projectors, Printers (laser, desk jet, dot matrix), Speaker, Plotter
Unit 3	Storage Devices <ul style="list-style-type: none">- Importance and need of backup- Storage Devices: Hard Disk, CD, DVD, Pen Drive, Memory Cards- Comparative advantages and disadvantages of using different backing storage media.- Difference between main(internal) memory and backing storage.
Unit 4	Computer Networks <ul style="list-style-type: none">- Introduction to analog and digital data- Need for conversion between analog and digital data- Modem and its purpose- Advantages and disadvantages of Computer Network- Different types of network (LAN, MAN, WAN)- Network Topology: (Bus, Star, Ring, Mesh, Hybrid)

REFERENCE BOOKS:

- Tanenbaum A.S. : Structured Computer Organization, Prentice-Hall of India Pvt. Ltd.
- Rajaraman V. : Computer Fundamentals, Prentice-Hall of India Pvt. Ltd.
- Tanenbaum A. S., Computer Networks, Prentice-Hall of India Pvt. Ltd., New Delhi, 1997.