



**MAHARAJA SURAJMAL BRIJ UNIVERSITY
BHARATPUR**

**MULTIDISCIPLINARY COURSES (MDC)
For Semester-III, IV & V**

FOR UNDER GRADUATE PROGRAMMES

NATIONAL EDUCATION POLICY-2020

... अरुण कुमार षाण्डेय
उपकुलसचिव
प्रभारी अकादमिक प्रथम

Structure for MDC (Computer Science) Course

B.Sc./B.A./B.Com. Semester – III, IV & V

S.No	Course	Semester	Nomenclature of Course	Theory/ Practical	Teaching Hours/Week	Credits
1	Computer Science	III	Computer Fundamentals	Theory	4	4
		IV	Programming with C	Theory	4	4
		V	Web Technologies Fundamentals	Theory	4	4




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Course Content for MDC (Computer Science) Course

B.Sc./B.A./B.Com. Semester III, IV & V

Semester: III

Code: MDC-COMP-20T-1001	Paper Title: Computer Fundamentals
Credits : 04	Hours/Week: 04

Course Outcomes:

After completing this course, the student will be able to:

1. Understand the basics of computer
2. Get to know about software and its classification
2. Learn about I/O devices and operating systems
3. Understand internet and its services
4. Learn about the threats and security concepts on computers

UNIT I

Introduction to Computers: Definition of Computers, History and Generations of Computers, Characteristics of computer, Classification of Computers. Fundamental Block diagram of Computer, Input & Output devices, Applications of computer in Various Fields

UNIT- II

Software: Definition of Software, Types of Software-System software, Application software and Utility software. Types of Computer Languages, Assemblers, Interpreters, Compiler.

Introduction to Operating Systems: Types of Operating System, Functions of Operating System.

Windows: Introduction to Windows, Starting Windows, Desk Top, Task Bar, Opening and closing applications, Working with files and folders-creating, deleting, opening, finding, copying, moving, and renaming.

UNIT-III

Networking: Concept, Basic Elements of a Communication System, Data Transmission Media, LAN, MAN, WAN. Introduction of Internet and WWW, Basic working of a Web Browser, Introduction to popular web browsers and search engines. Modes of Connecting to Internet.

PS

Electronic Mail: Introduction, advantages and disadvantages, User Ids, Passwords, e-mail addresses, message components, message composition, mailer features.

UNIT-IV

Computer Threats: Physical & non-physical threats, Virus, Worm, Trojan, Spyware, Keyloggers, Cookies, Phishing, Hacking & Cracking.

Computer Security Fundamentals: Confidentiality, Integrity, Authentication, Non-Repudiation, Security Mechanisms, Security Awareness, Security Policy, anti-virus software & Firewalls, backup & recovery.

Suggested Readings:

1. Sinha, P.K. & Sinha, Priti, Computer Fundamentals, BPB.
2. Dromey, R.G., How to Solve it By Computer, PHI.
3. Norton, Peter, Introduction to Computer, McGraw-Hill.
4. Leon, Alexis & Leon, Mathews, Introduction to Computers, Leon Tech World.
5. Rajaraman, V., Fundamentals of Computers, PHI.



Semester: IV

Code: MDC-COMP-20T-2001	Paper Title: Programming with C
Credits : 04	Hours/Week: 04

Course Outcomes:

After completing this course, the student will be able to:

1. Learn the basics of C program, data types and input/output statements.
2. Understand different types of operators, their precedence and associativity.
3. Learn about control and looping statements of C.
4. Implement programs using arrays and functions.
5. Get familiar with advanced concepts like structures, union etc. in C language.

UNIT I

Overview of C: History, Importance, Structure of C Program, Character Set, Constants and Variables, Identifiers and Keywords, Data Types, Assignment Statement, Symbolic Constant. Input/output Function

Operators & Expression: Arithmetic, Relational, Logical, Bitwise, Unary, Assignment, Conditional Operators and Special Operators. Operator precedence & associativity; Arithmetic Expressions, Evaluation of Arithmetic Expression

UNIT II

Type Casting and Conversion. Decision making with if statement, if else statement, nested if statement, else-if ladder, switch statement, break, continue & goto statement

Looping Statements: for, while, and do while loop, jumps in loops.

UNIT III

Arrays: One Dimensional arrays - Declaration, Initialization and Memory representation; Two Dimensional arrays -Declaration, Initialization and Memory representation.

Functions: definition, prototype, function call, passing arguments to a function: call by value, call by reference, recursive functions.



UNIT IV

User defined data types: Structures - Definition, Advantages of Structure, declaring structure variables, accessing structure members, Structure members initialization, Array of Structures;

Unions: Union definition; difference between Structure and Union.

Suggested Readings:

1. Gottfried, Byron S., Programming with C, Tata McGraw Hill.
2. Balagurusamy, E., Programming in ANSI C, Tata McGraw-Hill.
3. Jeri R. Hanly & Elliot P. Koffman, Problem Solving and Program Design in C, Addison Wesley.
4. Yashwant Kanetker, Let us C, BPB.
5. Rajaraman, V., Computer Programming in C, PHI.
6. Yashwant Kanetker, Working with C, BPB.



Semester: V

Code: MDe - COMP - 20T - 3001	Paper Title: Web Technologies Fundamentals
Credits : 04	Hours/Week: 04

Course Outcomes:

After completing this course, the student will be able to:

1. Learn about the web terminologies
2. Understand the fundamental concepts of web development & design
3. Understand the basic tags of HTML
4. Understand the Concepts of CSS

UNIT I

Introduction to Internet and World Wide Web (WWW); Evolution and History of World Wide Web, Web Pages and Contents, Web Clients, Web Servers, Web Browsers; Hypertext Transfer Protocol, URLs; Searching and Web-Casting Techniques, Search Engines and Search Tools, Scripting Languages.

UNIT II

Introduction to HTML: History of HTML, Basic structure of an HTML document, Introduction to Static and Dynamic Websites, HTML Tag vs Element, HTML Attributes; HTML-Basic Formatting Tags; HTML-Lists: Unordered Lists, Ordered Lists, Definition list; Image and Image Mapping, Hyperlink.

UNIT III

HTML-Table: < table >, < th >, < tr >, < td >, < caption >, <thead >, < tbody >, < tfoot >, < colgroup >, <col>; Colspan & Rowspan

HTML-Iframe: Iframe attributes, Using Iframe as the Target;

HTML-Form: Form attributes, Form elements: < input >, <textarea >. < button >, < select >, < label >, <fieldset>, <legend> etc.

PS

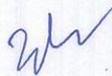
UNIT IV

Cascading Style Sheets: Understanding Style Sheets, CSS Syntax and Applying Style Sheets to HTML document, Developing Style Sheets: inline, internal and external. <DIV> tag, Using class and ID, Styling Backgrounds, Styling borders, Styling Text, Styling Fonts, Styling Links, Styling Lists, Styling Tables, Margin.

Suggested Readings:

1. Raj Kamal, Internet and Web Technologies, Tata McGraw-Hill.
2. Ramesh Bangia, Multimedia and Web Technology, Firewall Media.
3. Thomas A. Powell, Web Design: The Complete Reference, Tata McGraw-Hill
4. Wendy Willard, HTML Beginners Guide, Tata McGraw-Hill.
5. Deitel and Goldberg, Internet and World Wide Web, How to Program, PHI.




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