



Shri Vaishnav Vidyapeeth Vishwavidyalaya

B. Tech., B. Tech. + M. Tech. and B. Tech. + MBA (Information Technology)

Choice Based Credit System (CBCS) 2018-19

SEMESTER I

| COURSE CODE | CATEGORY | COURSE NAME | L | T | P | CREDITS | TEACHING & EVALUATION SCHEME | | | | |
|-------------|----------|-----------------|---|---|---|---------|------------------------------|---------------|----------------------|-------------------------|----------------------|
| | | | | | | | THEORY | | PRACTICAL | | |
| | | | | | | | END SEM University Exam | Two Term Exam | Teachers Assessment* | END SEM University Exam | Teachers Assessment* |
| BTMACS 101 | | Mathematics - I | 3 | 1 | - | 4 | 60 | 20 | 20 | - | - |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

1. The student will have ability to:
2. 1. To introduce the students with the Fundamentals of the Differential, Integral, Vector Calculus and Numerical Analysis.

Course Outcomes:

1. Upon completion of the subject, students will be able to:
2. Understand and apply the basics of the differential calculus.
3. Know the fundamental principles of the integral calculus and apply them.
4. Apply the techniques in the numerical analysis.
5. Know the numerical solution of the system of linear algebraic equations.
6. Understand and apply the basics of the vector calculus.

Syllabus:

UNIT I

Differential Calculus

Limits of functions, continuous functions, uniform continuity, monotone and inverse functions. Differentiable functions, Rolle's theorem, mean value theorems and Taylor's theorem, power series. Functions of several variables, partial derivatives, chain rule, Tangent planes and normals. Maxima, minima, saddle points, Lagrange multipliers, exact differentials

UNIT II

Integral Calculus

Riemann integration, fundamental theorem of integral calculus, improper integrals. Application to length, area, volume, surface area of revolution. Multiple integrals with application to volume, surface area, Change of variables.

UNIT III

Numerical Analysis

Number Representation and Errors: Numerical Errors; Floating Point Representation; Finite Single and Double Precision Differences; Machine Epsilon; Significant Digits.

Numerical Methods for Solving Nonlinear Equations: Method of Bisection, Secant Method, False Position, Newton- Raphson's Method, Multidimensional Newton's Method, Fixed Point Method and their convergence.

UNIT IV

Numerical Methods for Solving System of Linear Equations: Norms; Condition

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SEMESTER I

Numbers, Forward Gaussian Elimination and Backward Substitution; Gauss- Jordan Elimination; FGE with Partial Pivoting and Row Scaling; LU Decomposition; Iterative Methods: Jacobi, Gauss Siedal; Power method and QR method for Eigen Value and Eigenvector.

UNIT V

Vector Calculus

Gradient and directional derivative. Divergence and Curl of Vector point function, line and surface integrals. Green's, Gauss' and Stokes' theorems and their applications.

Text Books:

1. T. M. Apostol, Calculus, Volume I, 2nd Ed, Wiley, 1967.
2. T. M. Apostol, Calculus, Volume II, 2nd Ed, Wiley, 1969.
3. K. E. Atkinson, Numerical Analysis, John Wiley, Low Price Edition(2004).
4. S. D. Conte and C. de Boor, Elementary Numerical Analysis - An Algorithmic Approach, McGraw- Hill, 2005.
5. B. S. Grewal, Higher Engineering Mathematics, Khanna Publishers, Delhi

References:-

1. R. G. Bartle and D. R. Sherbert, Introduction to Real Analysis, 5th Ed, Wiley, 1999.
2. J. Stewart, Calculus: Early Transcendentals, 5th Ed, Thomas Learning (Brooks/ Cole), Indian Reprint, 2003.
3. J. Stewart, Calculus: Early Transcendentals, 5th Ed, Thomas Learning (Brooks/ Cole), Indian Reprint, 2003.
4. J. D. Hoffman, Numerical Methods for Engineers and Scientists, McGraw- Hill, 2001.
5. M.K Jain, S.R.K Iyengar and R.K Jain, Numerical methods for scientific and engineering computation (Fourth Edition), New Age International (P) Limited, New Delhi, 2004.
6. S. C. Chapra, Applied Numerical Methods with MATLAB for Engineers and Scientists, McGraw- Hill 2008.

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SEMESTER I

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| | | | | | | | THEORY | | PRACTICAL | | |
| | | | | | | | END SEM University Exam | Two Term Exam | Teachers Assessment* | END SEM University Exam | Teachers Assessment* |
| BTCS204 | | Computer Peripherals and Interfaces | 3 | 1 | 2 | 5 | 60 | 20 | 20 | 30 | 20 |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

1. To learn the concept of memory modules and types along with advanced memory.
2. To learn the input/output components presents on the motherboard.
3. To learn different modes of power supply to the PC and it's troubleshooting.
4. To learn different types of interfaces and ports of PC board.
5. To learn the device drivers and peripherals attached to the PC board.

Course Outcomes:

Upon completion of the course, students will be able:

1. To understand the hierarchy of the Memory used for PC and its applications.
2. To understand the use and working of I/O components.
3. To understand the principles behind the power supply and its usage.
4. To understand the onboard and external interfaces and its utility on PC board.
5. To understand the use and requirement of peripherals and their device drivers.

Syllabus:

UNIT I

Memory: Introduction to memory and its use, Memory chips and Modules: DIPP, SIPP, SIMM, DIMM, SO-DIMM, RIMM, Parity checking and ECC, ROM and its types, RAM and its types, Trouble shooting of Memory, Advanced Memory technologies: RDRAM, DDRAM, PRAM, VRAM.

UNIT II

Motherboard: Motherboard Controllers and System Resources, I/O System Bus: ISA, MCA, ELSA, VESA local bus, PCI, AGP, PCIX, Onboard I/O devices, Chipsets, ROM BIOS, ROM POST, CMOS settings, Motherboard Form factor: AT and ATX Motherboard, LPX and NLX form factor.

UNIT III

Power Supply: Power Supply Functions and Operations, Power Supply Quality and Specifications, Power Supply and Form factors, Ventilation and Cooling: Fan, Processor cooling, Temperature limits, Power Problems and procedures, Power protection devices, Back-up power system.

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SEMESTER I

UNIT IV

Interfaces and I/O Ports: Floppy Disk interface: Controller, Power cable, Control/Data cable, IDE interfaces: ATA standards, Master/Slave Configuration, Data transfer modes, SCSI interface: Bus, Standards, Hardware's, which is better SCSI or IDE, Serial ports, Parallel ports, USB, Troubleshooting.

UNIT V

Device Drives and Peripherals: Magnetic Storage: Reading/Writing, hard disk drives, Floppy disk drives, Optical Storage devices: CD-ROM drive, DVD-ROM drive, Keyboard: layouts, interfaces, Pointing devices, Mouse, Monitors, Printers, Troubleshooting of device drivers and peripherals.

Text Books:

1. Craig Zacker & John Rourke, PC Hardware- The complete reference, First Edition, TMH, 2017
2. S.K. Chauhan, PC Upgrading, maintenance and troubleshooting guide, First Edition, .
3. B. Govindarajulu, IBM PC and CLONES: Hardware, Troubleshooting and Maintenance McGraw Hill Education, 2nd Edition 2002
4. Mark Minasi, The Complete PC Upgrade and Maintenance Guide, Sixteenth edition Wiley, 2005
5. Mike Meyers, Introduction to PC Hardware and Troubleshooting, 1st edition, McGraw Hill Education, 2017

References:

1. Stephen Bigelow, Bigelow's Troubleshooting, Maintaining & Repairing PCs, 5 edition, McGraw Hill Education, 2017
2. Manahar Lotia, Pradeep Nair, Payal Lotia, Modern Computer Hardware Course, Second Revised Edition, BPB Publications, 2007
3. Vikas Gupta, Comdex Hardware and Networking Course Kit: Revised & Upgraded, Dreamtech Press, 2014
4. Dan Gookin, Troubleshooting and Maintaining Your PC All-in-One For Dummies, 3rd edition, John Wiley & Sons, 2017
5. Robert Bruce Thompson, Barbara Fritchman Thompson, Building the Perfect PC, 3 edition, O'Reilly, 2010

List of Practicals:

1. To study and demonstrate the motherboard.
2. To study microprocessor and its types.
3. To study Back Power Supply: SMPS and UPS.
4. To study the Optical Drives: CD-ROM and DVD-ROM.
5. To study the working principle of keyboard and mouse.
6. To study different types ports and slots on board.
7. To study various types of Cables and their Connectors.
8. To study the working principle of monitor.
9. To study different types of printers.
10. To study the process of assembling a Motherboard.
11. To study working of Floppy Disk Drive.

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SEMESTER I

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|----------------|----------|---|----------|----------|----------|----------|------------------------------|---------------|----------------------|-------------------------|----------------------|
| | | | | | | | THEORY | | PRACTICAL | | |
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| BTIT101 | | Introduction to Information Technology | 3 | - | 2 | 4 | 60 | 20 | 20 | - | 50 |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

1. The student will have ability to
2. Understand fundamentals of Information Technology.
3. Understand the social impact of Information Technology.

Course Outcomes:

1. At the end of this course students will be able.
2. To understand the basics of Computer Network and its working.
3. To understand the basics of DBMS and its use in real world.
4. To understand the basics and working of devices and software's in the computer.
5. To understand the basic Internet Services like E-mail, Telnet, FTP, WWW, HTML, and URL.
6. To understand the basic concepts of Cloud Computing.
7. To understand social impact of IT services in Real World.

Syllabus:

UNIT I

Data and Information: Introduction, Type of Data, Simple model of Computer, Organization of CPU, Register, Bus Architecture, Instruction Set, Memory & Storage Systems, I/O Devices, and System & Application Software.

Introduction to Operating System: Function, Types, Management of File, Process & Memory.

UNIT II

Introduction to Database Management System: Introduction, File Oriented Approach and Database Approach, Data Models, Architecture of Database System, Introduction and Working of Internet, Introduction to Network Protocol and Topologies. Types of Network: ISO-OSI Model, Functions of Different Layers. Internet Working Concepts, Devices, TCP/IP Model, LAN, WAN, Web Browser.

UNIT III

IT Application in Communication: Introduction to Cellular Mobile Systems, Cellular Mobile Telephone Systems, A Basic Cellular System, Operation of Cellular Systems. Network Services- Telephone Services, Radio and TV Broadcasting, Audio-Visual Conferencing, Video-on-Demand.

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SEMESTER I

UNIT IV

IT Applications in Multimedia: Introduction, Components of Multimedia and Challenges, Video Compression, Video Coding Technology: JPEG, MPEG, and JBIG.

Introduction to Cloud Computing: Types, Services, Models, Characteristics, Benefits and Challenges, Application, Limitations.

UNIT V

IT Application in E-Commerce and E-Governance: Introduction, Different Types of E-Commerce with Examples, Advantages and Disadvantages, E-Commerce in India, E-Services, E-Commerce Security, Internet Security and Ethics, Technology Issues, Social Issues, Introduction to E-Governance, Challenges, Application, Advantages, Case Study of MP-online and IRCTC.

Text Books:

1. Fundamentals of Computers: E Balagurusamy, TMH
2. Information Technology Principles and Application: Ajoy Kumar Ray & Tinku Acharya PHI.

Reference Books:

1. V.Rajaraman, Introduction to Information Technology; PHI
2. Santiram Kal Basic Electronics, PHI
3. M.N. Rao Cloud Computing, PHI
4. Computer Networks: Andrew Tananbaum, PHI
5. Data Base Management Systems, Korth, TMH
6. William Cy Lee , Mobile Cellular Telecommunications, 2ndEdition, MC Graw Hill.

List of Practical:

1. To study about the Generation of the Computer.
2. To study about MS-DOS Internal & External Commands.
3. To study about the Installation process of Windows Operating System.
4. To study about Widows related operation: Control Panel, Device Manager.
5. Creation and editing of text files using MS-Word.
6. Creation and operating of spreadsheet using MS -Excel.
7. Creation and editing power - point slides using MS -Power Point.
8. To study about MP-Online website and create report on it.
9. To study about IRCTC website and create report on it.
10. To study about NPTEL website and create report on.

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SEMESTER I

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|-------------|----------|----------------------------------|---|---|---|---------|------------------------------|---------------|----------------------|-------------------------|----------------------|
| | | | | | | | THEORY | | PRACTICAL | | |
| | | | | | | | END SEM University Exam | Two Term Exam | Teachers Assessment* | END SEM University Exam | Teachers Assessment* |
| BTEC104 | | Digital Logic and Circuit Design | 3 | 1 | 2 | 5 | 60 | 20 | 20 | 30 | 20 |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
 *Teacher Assessment shall be based following components: Quiz/Assignment/Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

The objective of this course is to:

1. Use of Boolean algebra and Karnaugh Map to simplify logic function.
2. Describe the operation of different Combinational and Sequential Logic Circuits.

Course Outcomes:

After completion of this course the students will be able to:

1. Design an optimal digital logic circuit to meet the given specifications.
2. Evaluate the performance of the given digital logic circuit based on specific criteria for reliable system implementation....

Syllabus:

UNIT I

Number System & Codes: Introduction to number systems, Binary numbers, Octal & Hexadecimal Numbers, Number base Conversion, Signed binary numbers : 1's Complement & 2's Complement representation and their arithmetic operation, Floating point representation, binary codes, BCD,ASCII, EBCDIC, Gray codes, Error detecting and Correcting codes, Hamming codes.

UNIT II

Boolean algebra and Logic gates: Introduction, Logic operations, Axioms and laws of Boolean algebra, Demorgan's theorem, Boolean functions, Canonical and standard forms. Logic gates and their applications, universal gates, NAND-NOR implementation of logic functions. Minimization techniques for logic functions-K-map, Tabular / QuineMcCluskey method.

UNIT III

Combinational logic: Arithmetic circuits- Half adder, Full adder, Halfsubtractor, Full subtractor, Parallel and Serial adder, BCD adder, Multiplexer, De-multiplexer, Encoder & Decoder.

UNIT IV

Sequential logic: Introduction, Latch and Flip Flop- S-R, D, JK and T, State diagram, characteristic equation, state table and excitation table, Flip flop conversion, applications of Flip flop, Counters, Registers.

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SEMESTER I

UNIT V

Semiconductor Memories and A/D and D/A converters: Semiconductor Memory – RAM, ROM- Organization, operation and their Types, PLD- PAL, PLA, PROM, FPGA, Analog to Digital (A/D) and Digital to Analog (D/A) converters and their types.

Text Books:

1. M. Morris Mano, "Digital Logic and Computer Design", Pearson Education, 2016.
2. S Salivahanan and S Arivazhagan: Digital Circuits and Design, 4th Edition, Vikas Publishing House, 2012.

Reference Books:

1. A. Anand Kumar, "Fundamentals of Digital Circuits", 4th Edition, PHI, 2016.
2. Floyd and Jain, "Digital Fundamentals", 10th Edition, Pearson Education India, 2011.
3. Roland J. Tocci, Widmer, Moss, "Digital Systems Principles and Applications", 10th Edition, Pearson 2009.
4. Stephen Brown, Zvanko Vranesic, "Fundamentals of Digital Logic Design", 3rd Edition, McGraw Hill, 2017.

List of Practical's:

1. To study and test of operation of all logic gates for various IC's (IC7400, IC7403, IC408, IC74332, IC7486).
2. Verification of DeMorgan's theorem.
3. To construct of half adder and full adder.
4. To construct of half subtractor and full subtractor circuits.
5. Verification of versatility of NAND gate.
6. Verification of versatility of NOR gate.
7. Design a BCD to excess 3 code converter.
8. Design a Multiplexer/Demultiplexer
9. Analysis of various flip flops with Preset and Clear capability.
10. Design of Johnson and Ring counter.
11. Design of synchronous and asynchronous up/down counters.

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|-------------|----------|----------------------------|---|---|---|---------|------------------------------|---------------|----------------------|-------------------------|----------------------|
| | | | | | | | THEORY | | PRACTICAL | | |
| | | | | | | | END SEM University Exam | Two Term Exam | Teachers Assessment* | END SEM University Exam | Teachers Assessment* |
| BTCS104 | | Principles of 'C' Language | 3 | - | - | 3 | 60 | 20 | 20 | - | - |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

The student will have ability to:

1. Identify situations where computational methods and computers would be useful.
2. Given a computational problem, identify and abstract the programming task involved.
3. Approach the programming tasks using techniques learned and write pseudo-code.
4. Choose the right data representation formats based on the requirements of the problem.
5. Use the comparisons and limitations of the various programming constructs and choose the right one for the task in hand.
6. Write the program on a computer, edit, compile, debug, correct, recompile and run it.
7. Identify tasks in which the numerical techniques learned are applicable and apply them to write programs, and hence use computers effectively to solve the task.

Course Outcomes:

Upon completion of the subject, students will be able to:

1. Understand the basic terminologies used in computer programming.
2. Proficient in using the basic constructs of C, to develop a computer program.
3. Understand the use of functions, pointers, arrays and files in programming.
4. Understand the fundamentals of procedure-oriented programming and be able to apply it in computer program development.

Syllabus:

UNIT I

Introduction to programming languages:

Evolution of Programming Languages, Structured Programming, The Compilation Process, Object Code, Source Code, Executable Code, Operating Systems, Interpreters, Linkers, Loaders, Fundamentals Of Algorithms, Flowcharts.

UNIT II

Introduction to 'C' Language: Character Set. Variables and Identifiers, Built-In Data Types. Variable Definition, Arithmetic Operators and Expressions, Constants And Literals, Simple Assignment Statement, Basic Input/Output Statement, Decision Making Within A Program, Conditions, Relational Operators, Logical Connectives, If Statement, If-Else Statement, Loops: While Loop, Do While, For Loop. Nested Loops, Infinite Loops, Switch Statement, Structured Programming.

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SEMESTER I

UNIT III

One Dimensional Arrays: Array Manipulation; Searching, Insertion, Deletion of an Element from an Array; Finding the Largest/Smallest Element in an Array; Two Dimensional Arrays, Addition/Multiplication of Two Matrices, Transpose of a Square Matrix, Strings as Array of Characters, Address Operators, Pointer Type Declaration, Pointer Assignment, Pointer Initialization, Pointer Arithmetic, Functions And Pointers, Arrays And Pointers, Pointer Arrays.

UNIT IV

Top-Down Approach of Problem Solving: Modular Programming and Functions, Standard Library of C Functions, Prototype of a Function: Formal Parameter List, Return Type, Function Call, Block Structure, Passing Arguments to a Function: Call by Reference, Call by Value, Recursive Functions and Arrays as Function Arguments Structure Variables, Initialization, Structure Assignment, Nested Structure, Structures and Functions, Structures and Arrays: Arrays of Structures, Structures Containing Arrays, Unions

UNIT V

Concept of Files: File Opening in Various Modes and Closing of a File, Reading from a File, Writing onto a File.

Text Books:

1. Tennesse W.Pratt, "Programming languages design and implementation", Prentice Hall of India.
2. Allen B. Tucker, "Programming Languages", Tata McGraw Hill.
3. Gottfried BS – Programming with C, TMH publications.
4. Balagurusamy:, "Programming with C++", ANSI C TMH

Reference Books:

1. Roosta- Foundation of Programming Languages, Vikas
2. Jeyapooan- A First Course in Prog with C, Vikas 8. Programming In C++, Y.I. Shah and M.H. Thaker, ISTE/EXCEL BOOKS
3. Fundamentals of Programming Languages, R. Bangia, Cyber Tech .
4. Kanetkar, Yashvant – Understanding Pointers in C- 2nd Edn. BPB

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SEMESTER I

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| | | | | | | | THEORY | | PRACTICAL | | |
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| BTCS108 | | Programming Skills with 'C' | - | - | 2 | 1 | - | - | - | 30 | 20 |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

*Teacher Assessment shall be based following components: Quiz/Assignment/

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COURSE OBJECTIVES

The student will have ability to:

1. Understand and use the basic programming constructs of C.
2. Manipulate various C datatypes, such as arrays, strings, and pointers.
3. Isolate and fix common errors in C programs.
4. Use memory appropriately, including proper allocation/deallocation procedures.
5. Apply object-oriented approaches to software problems in C.
6. Write small-scale C programs using the above skills.

COURSE OUTCOMES

1. Demonstrate a thorough understanding of modular programming by designing programs that require the use of programmer-defined functions.
2. Demonstrate a thorough understanding of arrays by designing and implementing programs that search and sort arrays.
3. Demonstrate a thorough understanding of the object-oriented programming concepts of encapsulation, data abstraction and composition by designing and implementing classes including the use of overloaded functions and constructors.
4. Demonstrate a thorough understanding of the concept of pointers and dynamic memory allocation by designing and implementing programs using pointers and dynamic memory allocation.
5. Demonstrate a thorough understanding of the implementation of programmer-defined functions and classes by writing code, performing unit testing and debugging of multiple complex programs.

SYLLABUS

Unit - 1

Introduction to Programming:

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SEMESTER I

Evolution of Programming Languages, Structured Programming, The Compilation Process, Object Code, Source Code, Executable Code, Operating Systems, Interpreters, Linkers, Loaders, Fundamentals of Algorithms, Flow Charts.

UNIT II

Programming using C

C data types, int, char, float etc, C Expressions, Arithmetic Operation, Relational and Logic Operations, C Assignment Statements, Extension of Assignment of The Operations, C Primitive Input Output Using getchar and putchar, Exposure to the scanf and printf functions, C Statements, conditional executing using if, else, Optionally Switch and Break Statements may be mentioned.

UNIT III

Iterations and Subprograms

Concept of loops, Example of Loops in C Using for, while and do-while, Optionally continue may be mentioned, One dimensional arrays and example of iterative programs using arrays, 2-d arrays Use in matrix computations, Concept of Sub-programming, functions Example of functions, Argument passing mainly for the simple variables.

UNIT IV

Pointers and Strings

Pointers, Relationship Between Arrays and Pointers Argument passing using Pointers Array of Pointers, Passing arrays as Arguments, Strings and C String Library. Structure and Unions, Defining C structures, Passing Strings as Arguments Programming Examples.

Unit –V

File handling:

Console Input Output Functions, Disk Input Output Functions, Data files, Command Line Arguments, Bitwise Operators, Enumerated Data Types, Type Casting, macros, The C Preprocessor, More About library Functions.

REFERENCE BOOKS:

1. E Balaguruswamy , Object Oriented Programming With C++ , 4th Edition , TMH, 2008
2. Brian W. Kernighan and Dennis M. Ritchie ,“The C Programming Language”, 2nd Edition, Prentice-Hall India, New Delhi, 2002
3. Herbert Schildt. “The Complete Reference C ”, 4th Edition, TMH, 2000
- 4.H. Cooper and H. Mullish, Jaico Publishing House. “Spirit of C”, 4th Edition, Jaico Publishing House, 2006

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B. Tech., B. Tech. + M. Tech. and B. Tech. + MBA (Information Technology)

Choice Based Credit System (CBCS) 2018-19

SEMESTER I

LIST OF EXPERIMENTS: (At least 10 based on Syllabus)

1. Write a program to produce ASCII equivalent of given number.
2. Write a program to find divisor or factorial of a given number.
3. Write a program to evaluate the following algebraic expressions after reading necessary values from the user
 - a. I $(ax+b)/(ax-b)$ II $(x^5+10x^4+8x^3+4x+2)$
4. Write a program to find sum of a geometric series.
5. Write a program to cipher a string.
6. Write a program to check whether a given string follows English capitalization rules.
7. Write a program to find sum of the numerical series.
8. Write a program to search whether a given substring exist in an input string or not and then delete this string from input string.
9. Write a recursive program for tower of Hanoi problem.
10. The fibonacci sequence of numbers is 1,1,2,3,5,8..... Based on the recurrence relation
 - i. $F(n)=F(n-1)+F(n-2)$ for $n>2$
Write a recursive program to print the first m Fibonacci number
11. Write a menu driven program for matrices to do the following operation depending on whether the operation requires one or two matrices
 - a. Addition of two matrices
 - b. Subtraction of two matrices
 - c. Finding upper and lower triangular matrices
 - d. Trace of a matrix
 - e. Transpose of a matrix
 - f. Check of matrix symmetry
 - g. Product of two matrices.
12. Write a program that takes two operands and one operator from the user perform the operation and then print the answer.
13. Write a program to print pyramid.
14. Write functions to add, subtract, multiply and divide two complex numbers $(x+iy)$ and $(a+ib)$ Also write the main program.
15. Write a program to copy one file to other, use command line arguments.
16. Write a program to mask some bit of a number (using bit operations).
17. An array of record contains information of managers and workers of a company. Print all the data of managers and workers in separate files.
 1. AnimationTool

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SEMESTER I

| COURSE CODE | CATEGORY | COURSE NAME | L | T | P | CREDITS | TEACHING & EVALUATION SCHEME | | | | |
|-------------|----------|-------------------------------------|---|---|---|---------|------------------------------|---------------|----------------------|-------------------------|----------------------|
| | | | | | | | THEORY | | PRACTICAL | | |
| | | | | | | | END SEM University Exam | Two Term Exam | Teachers Assessment* | END SEM University Exam | Teachers Assessment* |
| BTIT307 | | Web Development Lab- I (HTML & XML) | - | - | 4 | 2 | - | - | - | 60 | 40 |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
*Teacher Assessment shall be based following components: Quiz/Assignment/Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

1. Students will use a variety of design software to organize, create, publish, and manage a web site.
2. This course also puts emphasis on basic concepts of web design
3. Provide you the conceptual and technological developments in the field of Internet and web designing.
4. Course content includes creating a variety of graphic elements including video, animations, rollover effects, backgrounds, and page images

Course Outcomes:

1. Create an HTML Documents, and establish adequate formatting for presentation purposes.
2. Import, insert and modify images.
3. Insert and manipulate tables.
4. Establish and maintain internal and external link to available resources.
5. Use special effect to make the expressive, evocative documents.
6. Insert and manipulate multi-media objects.

Syllabus:

UNIT I

Introduction to HTML: What is HTML, HTML Documents, SGML, Basic structure of an HTML document, creating an HTML document, Headers tags, Body tags, Paragraphs formatting, Text Elements, Tag Elements, Special Character elements, Image tags, HTML Table tags and lists: Numbered list, Non- Numbered lists, Definition lists, Anchor tag, Name tag, Hyperlinks – FTP/HTTP/HTTPS, Links with images and buttons, Links to send email messages, Text fonts and styles, background colors/images, Marquee Behavior, Forms related tags. (Action, method, name, inputetc.)

UNIT II

HTML5: Introduction of HTML5, Browser supports, Migration from HTML4 to HTML5, New Elements in HTML5, HTML5 different parts layout of a web page, HTML5 Graphics: Canvas, SVG, HTML Media Tags: Inserting audio files, Inserting video files, Screen control attributes, Media control attributes, HTML Object.

UNIT III

CSS: Introduction of CSS, CSS Syntax CSS Id & Class. CSS Styling: styling Backgrounds,



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SEMESTER I

styling Text, styling Fonts, styling Links, styling Lists, styling Tables. CSS Box Model: Border, Outline, Margin, Padding. CSS Advanced: Grouping/Nesting, Dimension, Display, Positioning, Floating, Align, Pseudo-class, Pseudo-element, Navigation Bar, Image Gallery, Image capacity, Image Sprites, Media Types, and Attribute Selectors.

UNIT IV

XML: Introduction of XML, Cross scripting of XML, XML as intermediate language, Difference between XML and HTML, XML DOM, Tree, Syntax, Elements, Attributes, Namespaces, XPath, XML DTD, Applications, XQuery, XML Schema, XML Parser, XHTML: Introduction of XHTML, XHTML rules over the HTML, conversation HTML to XHTML.

UNIT V

Java Script: Introduction to client side scripting, Server side scripting, Java Script Syntax, Variables and Functions, Operators: JavaScript Arithmetic Operators, JavaScript Assignment Operators, JavaScript Popup Boxes, JavaScript Window, Events and Objects, JavaScript Function Call, Validation in webpages, Introduction of AJAX.

Text Books:

1. Jennifer Niederst Robbins. Learning Web Design, Fifth Edition, O'Reilly Media, Inc, May 2018.
2. Frain and Ben. Responsive Web Design with HTML5 and CSS3, Second Edition, 2015.
3. Nicholas c.Zakas. Java Script for Web Developers, Third edition, 2012.
4. George Q. Huang, K. L Mak. Internet Applications in Product Design and Manufacturing, ISBN: 3540434658, 2003 edition, springer, 2012.

References:-

1. Steven M. Schafer, "HTML, XHTML, and CSS Bible", Fifth Edition, WileyIndia, 2010.
2. John Duckett,"Beginning HTML, XHTML, CSS, and JavaScript ",WileyIndia, 2010.
3. Ian Pouncey, Richard York, "Beginning CSS: Cascading Style Sheets for Web Design",3rd edition, Wiley India, 2011.
4. Achyut S. Godbole, Atul Kahate, Web Technologies, ISBN: 9781259062681,3rd edition, TMH, 2013.

List of Practicals:

1. Design a Web Page, Insert an image on to the web page such that image is of height 300 and width 300 pixels. The image should have an ALT text in it.
2. Create a Web page that holds a bulleted list of the names of your friends. Make sure that the bullets are in plain circle.
3. Create a Frame which would hold both the web page that was created earlier. The frame should be split row-wise into equal halves.
4. Create a Web Page to display the marks you got in all subjects of last semester using table.
5. Create a Form having two boxes with labels as First Name and Last Name. The User should not be allowed to enter the names directly in the text boxes. The input has to be given in the prompt box and then entered values should be given in the textboxes.
6. Create a Web Page that has a button in the center of the page. Using mouse events change the Message in the statusbar.
7. Design a Web page that accepts Username and Password. Opens a new window when the password corresponds to a particular value is set by the developer

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SEMESTER I

8. Design a Web page that consists of 2 text boxes. When the page is first loaded set the focus to the first textbox. The user should not be allowed to leave the box unless enters a value in it.
9. To convert the HTML code to XHTML code.
10. To study the XML tree.
11. To study of Dreamweaver Tool.
12. To study of a Flash Animation Tool.

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