

Shri Vaishnav Institute of Information Technology

## B.Tech, BTech+M.Tech, BTech+MBA\_in Information Technology

## **SEMESTER -I** (2021-2025)

	Category			TEACHING & EVALUATION SCHEME									
			1	THEORY		PRAC'	FICAL	Th	Т	Р	CRED ITS		
COURSE CODE		COURSE NAME	END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*						
BTMACS 101	BS	Mathematics - I	60	20	20	0	0	3	1	-	4		

 $\label{eq:Legends: L-Lecture; T-Tutorial/Teacher Guided Student Activity; P-Practical; C-Credit;$ 

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

#### **Course Educational Objectives (CEOs):**

1. The student will have ability to:

To introduce the students with the Fundamentals of the Differential, Integral, Vector Calculus and NumericalAnalysis

#### **Course Outcomes (COs):**

After completion of this course the students are expected to be able to demonstrate following knowledge, skills and attitudes.

The students will be able to

- 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

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**SEMESTER -I (2021-2025)** 

#### **Syllabus**

#### UnitI

Differential Calculus :Limits of functions, continuous functions, uniform continuity, montone and inverse functions. Differentiable functions, Rolle'stheorem, 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

#### UnitII

**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 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.

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**Controller of Examination** Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

Joint Registrar Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

7HRS

9HRS

**10HRS** 



#### Unit-V

#### 8HRS

**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-Hill2008.

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COURSE CODE	Category			TEACHING & EVALUATION SCHEME									
			Т	HEORY		PRAC'	FICAL	Th	Т	Р	CRED ITS		
		COURSE NAME	END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*						
BTPH10 1	BS	Applied Physics	60	20	20	30	20	3	1	2	5		

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

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

#### **Course Educational Objectives (CEOs):**

- 1. To develop the comprehensive understanding of laws of physics.
- 2. To develop ability to apply laws of physics for various engineering applications.
- 3. To develop the experimental skills, ability to analyze the data obtained experimentally to reach substantiated conclusions.

#### **Course Outcomes (COs):**

After completion of this course the students are expected to be able to demonstrate following knowledge, skills and attitudes.

The students will be able to

- 1. Student will be able to comprehend laws of physics.
- 2. Student will be able to apply laws of physics for various engineering applications.
- 3. Student will be able to determine physical parameter experimentally and will be able to analyze the data obtained experimentally to draw substantiate conclusions.

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**SEMESTER -I** (2021-2025)

#### **Syllabus**

#### UnitI

**Quantum Physics:** Introduction to Quantum hypothesis, Matter wave concept, Wave Group and Particle velocity and their relations, Uncertainty principle with elementary proof and applications to microscope and single slit, Compton Effect, Wave function and its physical significance. Development of time dependent and time independent Schrodinger wave equation, Applications of time independent Schrodinger wave equation.

#### UnitII

**Solid State Physics:** Free electron model, Qualitative Analysis of Kronig Penney Model, Effective mass, Fermi level for Intrinsic and Extrinsic semiconductors, P-N junction diode, Zener diode, Tunnel diode, Photodiode, Solar- cells, Hall Effect, Introduction to Superconductivity, Meissner effect, Type I & II Superconductors

#### Unit-III

**Nuclear Physics**: Nuclear Structure & Properties Nuclear models: Liquid drop with semiempirical mass formula & shell model. Particle accelerators: Cyclotron, Synchrotron, Betatron. Counters and Detectors: Giger-Muller counters, Bainbridge Mass Spectrograph and Auston Mass Spectrograph

#### **Unit-IV**

Laser & Fiber Optics: Stimulated and Spontaneous Emission, Einstein"s A&B Coefficients, Population Inversion, Pumping, Techniques of Pumping, Optical Resonator, Properties and Applications of Laser, Ruby, Nd:YAG, He-Ne lasers.

Introduction to Optical fibre, Acceptance angle and cone, Numerical Aperture, V- Number, Ray theory of propagation through optical fibre, Pulse dispersion, applications of optical fibre.

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#### 10HRS

9HRS

#### 8HRS



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#### Unit-V

#### 8HRS

**Wave Optics:** Introduction to Interference, Fresnel's Bi-prism, Interference in Thin films, Newton's rings experiment, Michelson's interferometer and its application, Introduction to Diffraction and its Types, Diffraction at single slit, double slit, resolving power, Rayleigh criterion, Resolving power of grating, Concept of polarized light, Double refraction, quarter and half wave plate, circularly & elliptically polarized light.

#### **TEXTBOOKS:-**

- 1. Engineering Physics by Dr. S. L. Gupta and Sanjeev Gupta, DhanpatRai Publication, NewDelhi.
- 2. Engineering Physics by Navneet Gupta, DhanpatRai Publication, NewDelhi.
- 3. Engineering Physics by H. J. Sawant, Technical Publications, Pune, Maharastra.
- 4. Engg Physics by M.N. Avdhanulu& P.G. Kshirsagar, S.Chand&Co.Edition(2010).
- 5. Fundamentals of Physics by Halliday, Wiley, India.

#### **REFERENCES:-**

- 1. Concepts of Modern Physics by Beiser, TMH, NewDelhi.
- 2. Solid State Physics by Kittel, WileyIndia.
- 3. Atomic and Nuclear physics by Brijlal and Subraminiyan.
- 4. LASERSs and Electro Optics by Christopher C. Davis, Cambridge Univ. Press(1996).
- 5. Optroelectronics an Introduction by J. Wilson &J.F.B.Hawkes, "" Prentice-Hall IIEdition.
- 6. LASER theory and applications by A. K. Ghatak&Tyagarajan, TMH(1984). Optics by Ghatak,TMH.

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## **SEMESTER -I** (2021-2025)

#### List of Experiments:

- 1. Measurement of radius of curvature "R" of convex lens by Newton"s ringexperiment.
- 2. Measurement of Numerical aperture of fiber byLASER.
- 3. Determination of Energy band gap "E<sup>g</sup>" of Ge using Four Probemethod.
- 4. Measurement of Frequency of A.C. mains by electrically maintained vibratingrod.
- 5. Measurement of Resolving Power of Telescope.
- 6. Measurement of " $\lambda$ " of LASER light source using Diffraction Grating.
- 7. Determination of Planck"s constant by using photocell.
- 8. Determination of Energy band gap (E<sub>g</sub>) using PN Junction Diode.
- 9. To determine the mass of cane sugar dissolved in water using half shade polarimeter.
- 10. To study forward and reverse characteristics of Zener diode.
- 11. To study forward and reverse characteristics of P-Ndiode.
- 12. To study characteristics of Photodiode.
- 13. To study characteristics of LDR.
- 14.  $\mu$  and  $\omega$  of given prism using spectrometer.
- 15. Measuring height of a given object using Sextant.

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	Category		TEACHING & EVALUATION SCHEME									
			Т	HEORY		PRAC'	ГICAL	Th	Т	Р	CRED ITS	
COURSE		COURSE NAME	END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*					
BTEC104	DC	Digital Logic and Circuit Design	60	20	20	30	20	3	1	2	5	

 $\label{eq:Legends: L-Lecture; T-Tutorial/Teacher Guided Student Activity; P-Practical; C-Credit;$ 

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

#### **Course Educational Objectives (CEOs):**

- 1. The student will have ability 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 (COs):**

After completion of this course the students are expected to be able to demonstrate following knowledge, skills and attitudes.

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....

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#### **Syllabus**

#### UnitI

**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.

#### UnitII

**Boolean algebra and Logic gates:** Introduction, Logic operations, Axioms and laws of Boolean algebra, Demorgan<sup>\*\*</sup>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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#### 9HRS

## 8HRS

7HRS



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## **SEMESTER -I** (2021-2025)

#### Unit-V

#### 8HRS

**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,4<sup>th</sup> Edition, VikasPublishing House, 2012.

#### **Reference Books:**

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

#### List of Experiments:

- 1. 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 fulladder.
- 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 3codeconverter.
- 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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## **SEMESTER -I** (2021-2025)

	Category			T	EACHIN	G & EVA	LUATIO	)N SCHEME									
			1	THEORY		PRAC	ГICAL	Th	Т	Р	CRED ITS						
SUBJECT CODE		COURSE NAME	END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*										
BTIT101	DC	Introduction to Information Technology	60	20	20	-	50	2	0	2	3						

 $\label{eq:Legends: L-Lecture; T-Tutorial/Teacher Guided Student Activity; P-Practical; C-Credit;$ 

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

### **Course Educational Objectives (CEOs):**

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

#### **Course Outcomes (COs):**

After completion of this course the students are expected to be able to demonstrate following knowledge, skills and attitudes.

The students will be able to

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

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#### **Syllabus**

#### Unit-I

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

#### Unit-II

**Introduction to Database Management System:** Introduction, File Oriented Approach and Database Approach, Data Models, Architecture of Database System.

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

#### Unit-III

**Introduction to Computer Networks:** Introduction and Working of Internet, Network Protocols. Types of Network: ISO-OSI Model, TCP/IP Model, Functions of Layers, Networking Devices, Web Browser.

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

#### Unit-IV

**IT Applications in Multimedia:** Introduction, Components of Multimedia and Challenges, Video Compression, Lossy and lossless compression, Video Coding Technology: JPEG, MPEG.

#### 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, Introduction to E-Governance, Challenges, Application, Advantages,

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## 8HRS

9HRS

## 7HRS

8HRS



#### **Text Books:**

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

#### **References:**

- 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 Experiments:

- 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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SUBJECT CODE	Category			T	EACHIN	G & EVA	LUATIO	N SCH	IEMI	Ξ	
			Г	HEORY		PRAC	FICAL	Th	Т	Р	
		COURSE NAME	END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				CREDITS
BTCS102N	DC	Principles of 'C' Language	60	20	20	30	20	2	0	2	3

**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 Educational Objectives (CEOs):**

The student will have ability to:

- 1. Identify situations where computational methods and computers would be useful.
- 2. Give 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 (COs):**

After completion of this course the students are expected to be able to demonstrate following knowledge, skills and attitudes. The 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.

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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 7HRS 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, 10HRS 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, Switch Statement.
- UNIT III Arrays and Pointers: Array Manipulation; Searching, Insertion, 8HRS Deletion of an Element from an one dimensional Array; Finding the Largest/Smallest Element in an Array; Two Dimensional Arrays, Addition/Multiplication of Two Matrices, Transpose of a Square Matrix, Address Operators, Pointer Type Declaration, Pointer Assignment, Pointer Initialization, Pointer Arithmetic, Pointer Arrays.
- **UNIT IV Functions:** Modular Programming and Functions, Prototype of a **7HRS** Function: Parameter List, Return Type, Function Call, Block Structure, Call by Reference, Call by Value, Recursive Functions and Arrays as Function Arguments
- **UNIT V** Structure: Structure Variables, Initialization, Structure Assignment, 8HRS Structures and Arrays: Arrays of Structures.

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#### **Text Books:**

- 1. Gottfried BS Programming with C, TMH publications.
- 2. David Griffiths, "Head First C: A Brain-Friendly Guide" O Reilly Media Inc. 2011.
- 3. Allen B. Tucker, "Programming Languages", Tata McGraw Hill.
- 4. Tennence W.Pratt, "Programming languages design and implementation", Prentice Hall of India.

#### **References:**

- 1. Herbert Schildt "C: Complete Reference", Tata McGraw Hill 2000.
- 2. Yashwant Kanetkar, "Let us C", BPB Publication, 16<sup>th</sup> Edition 2018.
- 3. Fundamentals of Programming Languages, R. Bangia, Cyber Tech .
- Greg Perry and Dean Miller, "C Programming Absolute Beginner's Guide 3rd Edition", Que Publishing 2013.

#### List of Experiments:

- 1. Write a C program to display "This is my first C Program".
- 2. Write a C program to calculate area and circumference of a circle.
- **3.** Write a C program to perform addition, subtraction, division and multiplication of two numbers.
- 4. Write a program to calculate simple and compound interest.
- 5. Write a program to swap values of two variables with and without using third variable.
- 6. Write a program to display the size of every data type using "sizeof" operator.
- 7. Write a program to illustrate the use of unary prefix and postfix increment and decrement operators.
- 8. Write a program to input two numbers and display the maximum number.
- 9. Write a program to find the largest of three numbers using ternary operators.
- **10.** Write a program to find the roots of quadratic equation.

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- **11.** Write a program to input name, marks of 5 subjects of a student and display the name of the student, the total marks scored, percentage scored and the class of result.
- 12. Write a Program to Check Whether a Number is Prime or not.
- **13.** Write a program to find the largest and smallest among three entered numbers and also display whether the identified largest/smallest number is even or odd.
- 14. Write a program to find the factorial of a number.
- 15. Write a program to check number is Armstrong or not.
  - a. (Hint: A number is Armstrong if the sum of cubes of individual digits of a number is equal to the number itself).
- 16. Write a program to check whether a number is Palindrome or not.
- 17. Write a program to generate Fibonacci series.
- **18.** Write a program to find GCD (greatest common divisor or HCF) and LCM (least common multiple) of two numbers.
- **19.** Write a Program to Search an element in array.
- **20.** Write a Program to perform addition of all elements in Array.
- 21. Write a Program to find the largest and smallest element in Array.
- 22. Write a Program for deletion of an element from the specified location from Array.
- 23. Write a Program to access an element in 2-D Array.
- 24. Write a program for addition of two matrices of any order in C.
- **25.** Write a Program to multiply two 3 X 3 Matrices.
- **26.** Write a program to add, subtract, multiply and divide two integers using user-defined type function with return type.
- 27. Write a program to generate Fibonacci series using recursive function.
- 28. Write a program to find the sum of all the elements of an array using pointers.
- **29.** Write a program to swap value of two variables using pointer.

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- **30.** Write a program to add two numbers using pointers.
- **31.** Write a program to input and print array elements using pointer.
- **32.** Write a program to create a structure named company which has name, address, phone and noOfEmployee as member variables. Read name of company, its address, phone and noOfEmployee. Finally display these members' value.
- **33.** Write a program to read RollNo, Name, Address, Age & average-marks of 12 students in the BCT class and display the details from function.
- 34. Write a program to add two distances in feet and inches using structure

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Shri Vaishnav Institute of Information Technology

## B.Tech, BTech+M.Tech, BTech+MBA\_in Information Technology

## **SEMESTER -I** (2021-2025)

SUBJECT CODE	Category		TEACHING & EVALUATION SCHEME									
			THEORY			PRAC	Th	Т	Р	CRED ITS		
		COURSE NAME	END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*					
BTCS103N	DC	Computer System Organization	60	20	20	30	20	2	0	2	3	

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 Educational Objectives (CEOs):**

- 1. To understand the basic model of a modern computer with its various processing units.
- 2. To impart knowledge on CPU and it's processing of programs.
- 3. To provide the information for hardware utilization methodology.
- 4. To impart knowledge of Multiprocessor and inter-process communication.

#### **Course Outcomes (COs):**

After completion of this course the students are expected to be able to demonstrate following knowledge, skills and attitudes.

The students will be able to:

- 1. Understand the architecture of a modern computer.
- 2. Explain the functional behavior of CPU and its other processing units.
- 3. Knowledge of the Peripherals of a Computer System.
- 4. Give the information to speed-up the working of Computer System.

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# ShriVaishnavVidyapeethVishwavidyalaya, Indore Shri Vaishnav Institute of Information Technology B.Tech, BTech+M.Tech, BTech+MBA\_in Information Technology **SEMESTER -I (2021-2025)**

#### **Syllabus**

#### UnitI

Computer Basics: Von Newman model, CPU, Memory, I/O, Bus, Memory registers, Program Counter, Accumulator, Instruction register, Micro-operations, Register Transfer Language, Instruction cycle, Instruction formats and addressing modes.

#### UnitII

Control Unit Organization: Hardwired control unit, Micro-programmed control unit, Control Memory, Address Sequencing, Micro Instruction formats, Micro program sequencer, Microprogramming. Arithmetic and Logic Unit: Arithmetic Processor, Addition, subtraction, multiplication, and division, Floating point, and decimal arithmetic.

#### Unit-III

**Input Output Organization:** Modes of data transfer – program controlled, interrupt driven and direct memory access, Interrupt structures, I/O Interface, Asynchronous data transfer, I/O processor, Data transferring approaches and modes.

#### **Unit-IV**

Memory organization: Memory Hierarchy, Cache Memory - Organization and types of cache mappings, Virtual memory, Memory Management Hardware.

#### Unit-V

Multiprocessors: Pipeline and Vector processing, Instruction and arithmetic pipelines, Vector and array processors, Interconnection structure and inter-processor communication.

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8HRS

7HRS

## **10HRS**

9HRS



#### **Text Books:**

- 1. M. Morris Mano, Computer System Architecture, Fourth edition, Pearson Education, 2015.
- 2. William Stallings, Computer Organization and Architecture, Seventh Edition, PHI, 2009.
- 3. Andrew S. Tanenbaum, Structured Computer Organization, Sixth Edition, Pearson Education, 2016.
- 4. John P. Hayes, Computer Architecture and Organizations, Third edition, Mc-Graw Hills, New Delhi, 2017

#### **References:**

- 1. John L. Hennessy and David A. Patterson, Computer Architecture a quantitative approach, Fourth Edition, Elsevier, 2007.
- 2. Ramesh Gaonkar, Microprocessor Architecture, Programming and Applications with 8085, fifth Edition, Prentice Hall, 2015.
- 3. Nicholas Carter, Computer Architecture (Schaum's), Third Edition, TMH, 2012.
- 4. Carl Hamacher, Computer Organization, Fifth Edition, TMH, 2002.

#### List of Experiments:

- 1. Study of peripherals, components of a Computer System.
- 2. Write a C program for sum of two binary numbers.
- 3. Write a C program for multiplication of two binary numbers.
- 4. Write a C program to implement Booth's algorithm for multiplication.
- 5. Write a C program to implement Restoring Division Algorithm.
- 6. Write the working of 8085 simulator GNUsim8085 and basic architecture of 8085 along with small introduction.
- 7. Study the complete instruction set of 8085 and write the instructions in the instruction set of 8085 along with examples.

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- 8. Write an assembly language code in GNUsim8085 to implement data transfer instruction.
- 9. Write an assembly language code in GNUsim8085 to store numbers in reverse order in memory location.
- 10. Write an assembly language code in GNUsim8085 to add two 8 bit numbers stored in memory and also storing the carry.

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Shri Vaishnav Institute of Information Technology

## B.Tech, BTech+M.Tech, BTech+MBA\_in Information Technology

## **SEMESTER -I** (2021-2025)

COURSE CODE	Category			T	EACHIN	G & EVA	LUATIC	N SCHEME									
			]	THEORY		PRAC	FICAL	Th	Т	Р	CRED ITS						
		COURSE NAME	END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*										
BTIT102	DC	Web Development	0	0	0	•	•	0	0	2	1						
N		Lab-I(XML & HTML)				30	20										

 $\label{eq:Legends: L-Lecture; T-Tutorial/Teacher Guided Student Activity; P-Practical; C-Credit;$ 

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

#### **Course Educational Objectives (CEOs):**

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 (COs):**

After completion of this course the students are expected to be able to demonstrate following knowledge, skills and attitudes.

The students will be able to

1. Create an HTML Documents, and establish adequate formatting for presentation purposes.

- 2. Import, insert and modify images.
- 3. Insert and manipulate tables.

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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, Text Elements, Tag Elements, Special Character elements, Image tags, HTML Table tags and lists, Anchor tag, Name tag, Hyperlinks - FTP/HTTP/HTTPS, Links to send email messages, Text and Background fonts and styles, Marquee Behavior, Forms related tags. (Action, method, name, input etc.)

#### Unit II

HTML5: Introduction of HTML5, 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/video files, Screen / Media control attributes, HTML Object.

#### **Unit-III**

CSS: Introduction of CSS, CSS Syntax CSS Id & Class. CSS Styling: styling Backgrounds, styling Text, styling Fonts, styling Links, styling Lists, styling Tables. CSS Box Model: Border, Outline, Margin, Padding.

#### **Unit-IV**

CSS Advanced: Grouping/Nesting, Dimension, Display, Positioning, Floating, Align, Pseudoclass, Pseudo-element, Navigation Bar, Image Gallery, Image capacity, Image Sprites, Media Types, and Attribute Selectors.

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#### 8 HRS

**7 HRS** 

**9 HRS** 



#### Unit-V

#### 8 HRS

**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.

#### **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.

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#### **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 develop

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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