SEMESTER I

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	THEORY END SEM University Exam	THEORY Two Term Exam	THEORY Teachers Assessment*	PRACTICAL END SEM University Exam	PRACTICAL Teachers Assessment*
							TEACHING & EVALUATION SCHEME				
BTMACS 101	UG	**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. To introduce the students with the Fundamentals of the Differential, Integral, Vector Calculus and NumericalAnalysis.

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, 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

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 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‑Hill2008.

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COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY		PRACTICAL		
							END SEM University Exam	Two Term Exam	Teachers Assessments	SEM University	Teachers Assessments
BTPH101	UG	Applied Physics	3	1	2	5	60	20	20	30	20

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

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

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.

UNIT I

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.

UNIT II

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 semi-empirical 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.

UNIT V

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 andSubraminiyan.
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.

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6. LASER theory and applications by A. K. Ghatak&Tyagarajan, TMH(1984).
   Optics by Ghatak,TMH.

PRACTICAL LIST:-

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_g" 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 "λ" of LASER light source using Diffraction Grating.
7. Determination of Planck"s constant by using photocell.
8. Determination of Energy band gap (E_g) 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. μ and ω of given prism using spectrometer.
15. Measuring height of a given object using Sextant.

| | | | | | | | TEACHING & EVALUATION SCHEME | | | | |
| | | | | | | | THEORY | | | PRACTICAL | |
COURSE CODE	**CATEGORY**	**COURSE NAME**	**L**	**T**	**P**	**CREDITS**	**END SEM University Exam**	**Two Term Exam**	**Teachers Assessment***	**END SEM University Exam**	**Teachers Assessment***
BTCS 102	**UG**	**Introduction to Computer Science and Engineering**	3	0	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. To introduce the fundamentals concepts of Computer system.
2. Understanding the basic concepts and features of various kinds of Operating systems.
3. Learning the Concepts of Office Automation Tools.
4. To provide knowledge of Networking, Internet, Communication and security.

Course Outcomes:
Upon completion of the subject, Students will be able to:

1. Understand the basic terminologies of Computer System.
2. Gain knowledge about various kinds of Operating Systems and their features.
3. Learn the Concepts of Office Automation Tools.
4. Understand Networking, Internet, Communication and Security.

Syllabus:

UNIT I
   Introduction to Computer Fundamentals: Introduction to Computer, Objectives, Hardware and Software, Block Diagram of the Computer, Functions of the different Units, CPU(Central Processing Unit), Input Unit, Output Unit, Memory, Storage Devices, Representation of data and information, Computer Languages, Machine language, Assembly Language, High level Language, Number System and Conversion, Classification of Computers, History and Generations of Computer, Types of Computers, Characteristics of Computers, Introduction to Free and Open Source Software, Computer Virus, Types of Viruses, Use of Antivirus software. Applications of Computers: Home, Education and Training, Entertainment, Science, Medicine, Engineering etc.

UNIT II
   The Operating System: The Graphical User Interface (GUI), Definition of Operating System,

Objective, Types and Functions of Operating Systems, Windows Operating System, Installing MS Windows, Working with Windows Operating System, System Tools and Applications in Windows, MS-DOS (Disk Operating System), Basic DOS commands, Switching Between DOS and Windows, Comparison of DOS and Windows, System Tools and Applications in MS-DOS, case study of Unix, Linux OS.

UNIT III

Office Automation Tools-I: Word Processing Basics, Elements of word Processing and Working Objectives, MS-Word Screen and its Components, , MS-Office (Word, Access, Outlook, Front page etc),Working with MS-Word, Menu Bar, Creating Documents, Using Templates, Saving a documents, Working with documents, Setting up pages of a document, Printing Documents with different options, Using Tables and Columns, Object Linking and Embedding, Hyperlink, Envelopes & Label Creation, Grammar & Spell Check, Mail Merge, Macro Creation, Previewing and Printing Documents.

UNIT IV

Office Automation Tools-II: Spread Sheet: Introduction to MS-Excel, Starting MS-Excel, Basics of Workbook and Spreadsheet, MS-Excel Screen and Its Components, Features of Excel, Elementary Working with MS-Excel, Manipulation of cells, Formatting of Spreadsheet and Cells, Formulas and Functions, Spread sheets for Small accountings, Previewing and Printing a Worksheet.

Power-point: Introduction to MS-PowerPoint, Basics of PowerPoint, MS- PowerPoint Screen and Its Components, Features of PowerPoint, Elementary, Elementary Working with MS-PowerPoint, Preparation of Slides, Creation of Presentation, Providing aesthetics, Slide Manipulation and Slide Show, Presentation of the Slides

UNIT V

Computer Communication and Internet: Introduction to Computer Networks, Internet and World Wide Web, Communication and Collaboration(Electronic Mail), Basics of Electronic Mail, Web Browsers and Servers, Introduction to HTML, Use of Computer in E-Commerce, Internet Applications, Electronic Data Interchange, Electronic Payment System, Internet Security, Privacy, Ethical Issues & Cyber Law.

Text Books:
1. E Balagurusamy , "Fundamentals of Computers ",TMH 2009.
2. Silakari and Shukla, "Basic Computer Engineering ", Wiley India 2011.
3. V. Rajaraman, Neeharika Adabala, "Fundamentals of Computers", Sixth edition PHI 2015
4. Ajoy Kumar Ray and Tinku Acharya ," Basic Computer Engineering", PHI 2011.
5. P K Sinha ,"Fundamentals of Computers " ,Fourth , BPB Publications, 2004.

References:-
1. J. P. Tremblay and R.B. Bunt, "An Introduction of Computer Science –An Algorithmic Approach",TMH 2015….
2. Faithe Wempen , "Computing Fundamentals: Introduction to Computers ", Wiley 2015.

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3. Norton, Peter, "Introduction to Computers", Fourth revised ,Mc-Graw-Hill 2000.
4. Reema Thareja , "Fundamental of Computers", Oxford University Press, 2014.

List of Practicals:-

1. Study and Perform different MS –DOS Commands(Internal and External).
2. Create the "test" directory in the directory you are currently in using MS-DOS.
3. Study of Word – Templates, Styles.
4. Create a new user and give it Administrator privilege for Microsoft windows OS.
5. Create a MS-Word .doc file contain your complete CV.
6. Study and perform different Excel Commands/Functions.
7. Perform MS-Excel Accounting.
8. Create a MS-Excel .xls file contain mark sheet.
9. Display the student's result into a chart using MS-Excel.
10. Create a MS-Power Point Presentation .ppt file covers the topic "Computer's Evolution".
11. Create a MS-Power Point Presentation .ppt file covers the topic "social responsibility".
12. Create a MS-Access database .mdb file to store the results of students.
13. Study of various Network topologies.

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*
BTEC 104	**UG**	**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.

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, VikasPublishing 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, ZvankoVranesic, "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 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.

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*
BTCS104	UG	**Principles of 'C' Language**	3	0	-	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 abstractthe 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.

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: Foo1lal Parameter List, Return Type, Function Call, Block Structure, Passing Arguments to a Function: Call by Reference, Call by Value, Recursive Functionsand Arrays as Function ArgumentsStructure 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:

3. .Tennence 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. Jeyapoovan- 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

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY		PRACTICAL		
							END SEM University Exam	Two Term	Teachers Assessment*	END SEM University	Teachers Assessment*
BTCS108	UG	**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/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

COURSE OBJECTIVES

The student will have ability to:

- Understand and use the basic programming constructs of C.
- Manipulate various Cdatatypes, such as arrays, strings, and pointers.
- Isolate and fix common errors in C programs.
- Use memory appropriately, including proper allocation/deallocation procedures.
- Apply object-oriented approaches to software problems in C.
- 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.

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SYLLABUS

Unit - 1
Introduction to Programming:
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.
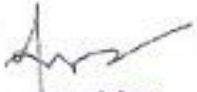
Unit -V
 File handling:
Console Input Output Functions, Disk Input Output Functions, Data files, Command Line Arguments, Bitwise Operators, Enumerated Data Types, Type Casting, macros, The C Preprocessor, More About library Functions.

TEXT 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
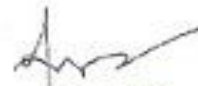
4.H. Cooper and H. Mullish, Jaico Publishing House. "Spirit of C", 4th Edition, Jaico Publishing House, 2006

LIST OF EXPERIMENTS:

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
    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
        $F(n)=F(n-1)+F(n-2)$ 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.
16. Write a program to copy one file to other, use command line arguments.
17. Write a program to mask some bit of a number (using bit operations).
18. 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

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	UG	Web Development Lab- I(HTML and 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 suppots, 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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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 status bar.
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
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

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.