

Shri Rawatpura Sarkar University, Raipur



Examination Scheme & Syllabus

For

Bachelor of Technology

In

Computer Science & Engineering

Semester-III

(Effective from the session: 2022-23)

**Faculty of Engineering,
Shri Rawatpura Sarkar University, Raipur**



SHRI RAWATPURA SARKAR UNIVERSITY, RAIPUR,

CHHATTISGARH

FACULTY OF ENGINEERING

Four Years B.TECH Programme

Scheme of Teaching and Examination

B.TECH Third Semester

Computer Science Engineering

Outcome Based Education (OBE) and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2022-2023)

S.No.	Course Code	Course Title	Hours / Week			Credits	Maximum Marks			Sem End Exam Duration (Hrs)
			L	T	P		Continuous Evaluation	Sem End Exam	Total	
1	EBT04301	Mathematics-III	3	1	-	4	30	70	100	3 Hrs.
2	EBT04302	Basic Electronics	3	1	-	4	30	70	100	3 Hrs.
3	EBT04303	Principles of Programming –I	3	1	-	4	30	70	100	3 Hrs.
4	EBT04304	Data Structure	3	1	-	4	30	70	100	3 Hrs.
5	EBT04305	Programming with Visual Basic Dotnet	3	1	-	4	30	70	100	3 Hrs.
6	EBT04391	Basic Electronics Lab	-	-	2	1	15	35	50	3 Hrs.
7	EBT04392	Data Structure Lab	-	-	2	1	15	35	50	3 Hrs.
8	EBT04393	Programming with Visual Basic Dotnet Lab	-	-	2	1	15	35	50	3 Hrs.
Total Contact hr. per week: 32			Total Credit: 23			Grand Total Marks:			650	



SHRI RAWATPURA SARKAR UNIVERSITY, RAIPUR,

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FACULTY OF COMPUTER SCIENCE & ENGINEERING

B.TECH Third Semester

Course Title	MATHEMATICS – III				
Course Code	EBT04301				
Course Credits	L	T	P	TC	
	3	1	-	4	
Prerequisites	Basic knowledge about foundation of mathematic.				
Course Objectives	<ol style="list-style-type: none"> 1. To make the students understand the Fourier series analysis is powerful methods where the formulas are integrals and to have knowledge of expanding periodic functions that explore variety of applications of Fourier series. 2. To provide knowledge of Laplace transform of elementary functions including its properties and applications to solve ordinary differential equations. 3. To provide a sound background of complex analysis to perform a thorough investigation of major theorems of complex analysis and to apply these ideas to a wide range of problems that includes the evaluation of both complex line integrals and real integrals. 4. To have a thorough knowledge of PDE that arises in mathematical descriptions of situations in engineering. 5. To study about a quantity that may take any of a given range of values that can't be predicted as it is but can be described in terms of their probability. 				
Course Contents	<p>UNIT - I</p> <p>Fourier series: Expansion of function as Fourier series, Change of interval, Even and odd functions, Half-range Fourier series, Practical harmonic analysis.</p> <p>UNIT - II</p> <p>Laplace Transformation: Laplace transform of elementary functions, Properties of Laplace transform, Laplace transform of derivatives and integrals, multiplication by integrals and division by integrals, Laplace transform of periodic functions. Inverse Laplace transform, Convolution theorem, Application of Laplace transform to solutions of ordinary differential equations.</p> <p>UNIT - III</p> <p>Theory of Complex Variables: Limit, Derivative and Analytic functions; Cauchy-Riemann equations and its applications to flow problems; Complex Integration: Line and Contour integral, Cauchy integral theorem and Integral formula; Taylor series, Laurent series; singularities; Poles and their orders and</p>				

	<p>residues; Evaluation of real definite integrals.</p> <p>UNIT - IV</p> <p>Partial Differential Equation: Formation of partial differential equations, Equations solvable by direct integration, Lagrange's linear equations, Homogeneous linear differential equations with constant coefficients, Non homogeneous linear equations, Solution of partial differential equations by the method of separation of variables.</p> <p>UNIT - V</p> <p>Random variable: Discrete and continuous probability distributions, Mathematical expectation, Mean and Variance, Moments, Moment generating function, probability distribution, Binomial, Poisson and Normal distributions.</p>
Course Outcomes	<ul style="list-style-type: none"> • After completion of this course the students will be able to apply Fourier series, Laplace transformation, Theory of complex variable, Partial differential equations and Random variable to Computer Science problems and solve them. Hands on these Mathematical topics will make them equipped to prepare for higher studies through competitive examinations.
Text Books	<ol style="list-style-type: none"> 1. Advanced Engg. Mathematics by R.K. Jain Publishing House. 2. Applied Mathematics by P.N. Wartikar & J.N. Wartikar. Vol - II– Pune Vidyarthi GrihaPrakashan, Pune.
Reference Books	<ol style="list-style-type: none"> 1. Applied Mathematics for Engineers & Physicists by Louis A. Pipes - TMH. 2. Advanced Engg. Mathematics by S.R.K. Iyengar – Narosa Publishing House.



SHRI RAWATPURA SARKAR UNIVERSITY, RAIPUR,

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FACULTY OF COMPUTER SCIENCE & ENGINEERING

B.TECH Third Semester

Course Title	BASIC ELECTRONICS				
Course Code	EBT04302				
Course Credits	L	T	P	TC	
	3	1	-	4	
Prerequisites	Basic knowledge about electronic and computers.				
Course Objectives	<ol style="list-style-type: none"> To learn basic concepts of semiconductors. To understand working principle of Diode, Transistor and FET. To gain knowledge of applications of Diode and Transistor. To learn concepts of transport phenomenon and amplifications through numerical. 				
Course Contents	<p>UNIT - I</p> <p>Introduction: Transport Phenomena in semiconductor, Formation of P-N Junction, Properties of P-N Junction, P-N Junction Diodes; Semiconductor Diodes, V-I Characteristics, Effect of Temperature on V-I Characteristics, Ideal Diode, Diode equation, Diode Resistance, Diode Capacitance: Transition and Diffusion Capacitance</p> <p>UNIT - II</p> <p>Rectifying circuits and DC Power Supplies: Load line analysis of diode circuit, Half wave rectifier: Voltage regulation, Ripple factor, Ratio of rectification, Transformer Utilization factor. Full wave rectifier, Bridge rectifier, Filter circuits for power supply: Inductor filter, Capacitor filter, LC filter, Multiple LC filter, CLC or filter. Zener diode: Break down mechanism, Characteristics, Specifications, Voltage regulator circuit using zener diode.</p> <p>UNIT - III</p> <p>Transistor Introduction, Construction, Types: npn and pnp, Current components. Transistor as an amplifier, Transistor Characteristics, Transistor Circuit Configuration: Common Base (CB) Configuration, Common Emitter (CE) Configuration, Common Collector Configuration (CC), Early Effect, Ebers-Moll Model, Maximum Voltage Ratings.</p> <p>UNIT - IV</p> <p>Passive Clipper and Clamper Circuits:</p> <p>classification of series and parallel clipper and clamper circuits, biased and unbiased clipper and clamper circuits, R-C low pass and high pass circuits. Oscillator: Sinusoidal oscillator, phase shift oscillators, Wien Bridge oscillator, Resonant circuit oscillators: General form of Oscillator Configuration- LC Colpitts and LC Hartley,</p>				

	<p>Crystal oscillator. (Elementary treatment of BJT based oscillators only).</p> <p>UNIT - V</p> <p>Field Effect Transistor (FET): Introduction, Construction, Operation, V-I Characteristics, Transfer Characteristics, Drain Characteristics, Small-Signal Model. Metal Oxide Semiconductor Field Effect Transistor (MOSFET): Introduction, Construction, Operation and characteristics, Depletion MOSFET, Enhancement MOSFET.</p>
Course Outcomes	<p>After completion of this course the students will be able to -</p> <ol style="list-style-type: none"> 1. Gain the knowledge of basics of semiconductor devices and their applications. 2. Apply concepts of Junction theory in designing and solving basic circuits.
Text Books	<ol style="list-style-type: none"> 1. Integrated Electronics: Analogy & Digital Circuit Systems – Jacob Millman& Halkias, TMH. 2. Electronic Devices & Circuits – Allen Mottershead, PHI.
Reference Books	<ol style="list-style-type: none"> 1. Electronic Devices and Circuit Theory – Boy lestad&Nashelsky, 8th Ed. PHI. 2. Electronic Devices & Circuit Analysis – K. Lal Kishore, BS Publications.



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FACULTY OF COMPUTER SCIENCE & ENGINEERING

B.TECH Third Semester

Course Title	PRINCIPLES OF PROGRAMING –I				
Course Code	EBT04303				
Course Credits	L	T	P	TC	
	3	1	-	4	
Prerequisites	Basic knowledge about computers programming.				
Course Objectives	1. To learn basic concepts of computer programming. 2. programming language constructs such as binding, binding times, data types and implementation, operations.				
Course Contents	<p>UNIT - I</p> <p>Introduction of Programming Languages :</p> <p>Types of Languages, Evolution of 'C' Language, Structure of a 'C' Program, 'C' Program development life cycle, Executing and Debugging a 'C' Program.</p> <p>'C' Tokens :</p> <p>Keywords and Identifiers, Operators, Constants, Variables, Data Types, Precedence of Operators, Scope and Lifetime of Variables.</p> <p>Control Statement and Expressions :</p> <p>Decision Making using if statement, Types of if ...else block, Switch case Block, GOTO statement.</p> <p>Looping :</p> <p>Concept of Loop, For loop, While loop, Do while loop, Jumping in Loop, break and continue statement.</p> <p>UNIT - II</p> <p>Arrays and String :</p> <p>Introduction of Array, One - D Array, Two - D Array, Multidimensional Array, String Concept, String Functions.</p> <p>Functions :</p> <p>Concept of Function, User defined Function, System Defined Function, Types of</p>				

parameter passing in function.

Pointers :

Need of Pointers, Types of Pointers, Pointer Expression, Arrays of Pointers, Pointers and Functions.

UNIT - III

Structure and Unions :

Need of Structure, Implementing Structure Variable, Arrays of Structure, Structure within Structure Introduction of Unions Difference between Structure and Unions.

File Handling using 'C' :

Opening and Closing File, Input / Output operations on File, Random Access to Files , Command Line Arguments.

UNIT - IV

Introduction to Object Oriented Programming :

Concept of OOP, Features of OOP, Introduction of 'C++', Structure of 'C++' program , Executing and Debugging a 'C++' Program.

Classes & Objects :

Classes & Object Specifier, Defining data members and member functions.

Constructors and Destructor :

Concept of Constructor, Types of Constructors, Memory allocation (new and delete), Usage of destructor.

Function in 'C++' :

Call by reference, Return by reference, Function overloading and default arguments , Inline function, Static class members, Friend functions, Virtual Functions.

UNIT - V

Inheritance :

Types of inheritance, Virtual base classes and abstract base classes, Constructor and destructor in derived class.

Operator Overloading :

Overloading Unary and Binary operators, Overloading using friend function.

Exception Handling :

Various Exception Handling classes, Implementing try and catch block, Use of throw keyword.

Course Outcomes	<p>After completion of this course the students will be able to -</p> <ol style="list-style-type: none"> 1. Knowledge of, and ability to use, language features used in current programming languages. 2. An ability to program in different language paradigms and evaluate their relative benefits. 3. An understanding of the key concepts in the implementation of common features of programming languages. 4. Explain arrays and strings and create programs using them. 5. Demonstrate how to control errors with exception handling.
Text Books	<ol style="list-style-type: none"> 1. Concepts of Programming Languages Robert. W. Sebesta 10/E, Pearson Education. 2. Programming Language Design Concepts, D. A. Watt, Wiley Dreamtech, 2007.
Reference Books	<ol style="list-style-type: none"> 1. Programming Languages, 2nd Edition, A.B. Tucker, R. E. Noonan, TMH. 2. Programming Languages, K. C. Louden, 2nd Edition, Thomson, 2003.



SHRI RAWATPURA SARKAR UNIVERSITY, RAIPUR,

CHHATTISGARH

FACULTY OF COMPUTER SCIENCE & ENGINEERING

B.TECH Third Semester

Course Title	DATA STRUCTURES			
Course Code	EBT04304			
Course Credits	L	T	P	TC
	3	1	-	4
Prerequisites	Know the classifications of data structures, i.e., linear and non-linear understand the basic operations on linear and non-linear data structures;			
Course Objectives	<ol style="list-style-type: none">1. Define the term 'data structure';2. Explain the memory representation of all types of data structures3. Explain how to implement the all kinds of data structures.			
Course Contents	<p>UNIT- I</p> <p>Introduction: Basic Terminology, Elementary Data Organization, Algorithm, Efficiency of an Algorithm, Time and Space Complexity, Asymptotic notations: Big-Oh, Time-Space trade-off. Abstract Data Types (ADT) Arrays: Definition, Single and Multidimensional Arrays, Representation of Arrays: Row Major Order, and Column Major Order, Application of arrays.</p> <p>UNIT-II</p> <p>Stacks: Abstract Data Type, Primitive Stack operations: Push & Pop, Array and Linked Implementation of Stack in C, Application of stack: Prefix and Postfix Expressions, Evaluation of postfix expression, Recursion, Tower of Hanoi Problem, Simulating Recursion, Principles of recursion, Tail recursion, Removal of recursion Queues, Operations on.</p> <p>UNIT- III</p> <p>Trees: Basic terminology, Binary Trees, Binary Tree Representation: Array Representation and Dynamic Representation, Complete Binary Tree, Algebraic Expressions, Extended Binary Trees, Array and Linked</p> <p>Representation of Binary trees, Tree Traversal algorithms: Inorder, Preorder and Postorder, Threaded Binary trees, Traversing Threaded Binary trees, Huffman algorithm.</p> <p>UNIT-IV</p> <p>Graphs: Terminology, Sequential and linked Representations of Graphs: Adjacency Matrices, Adjacency List,</p> <p>Adjacency Multi list, Graph Traversal : Depth First Search and Breadth First Search, Connected Component,</p> <p>Spanning Trees, Minimum Cost Spanning Trees.</p>			

	<p>UNIT-V</p> <p>Searching : Sequential search, Binary Search, Comparison and Analysis Internal Sorting: Insertion Sort, Selection, Bubble Sort, Quick Sort, Two Way Merge Sort, Heap Sort, Radix Sort, Practical consideration for Internal Sorting. Search Trees: Binary Search Trees(BST), Insertion and Deletion in BST.</p>
Course Outcomes	<ul style="list-style-type: none"> • Have a comprehensive knowledge of the data structures and algorithms on which file structures and data bases are based. • Understand the importance of data and be able to identify the data requirements for an application. • Have in depth understanding and practical experience of algorithmic design and implementation.
Text Books	<ol style="list-style-type: none"> 1. Aaron M. Tenenbaum, YedidyahLangsam and Moshe J. Augenstein “Data Structures Using C and C/C++” , PHI 2. Horowitz and Sahani, “Fundamentals of Data Structures”, Galgotia Publication
Reference Books	<ol style="list-style-type: none"> 1. R. Kruse etal, “Data Structures and Program Design in C”, Pearson Education 2. Lipschutz, “Data Structures” Schaum’s Outline Series, TMH 3. G A V Pai, “Data Structures and Algorithms”, TMH



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FACULTY OF COMPUTER SCIENCE & ENGINEERING

B.TECH Third Semester

Course Title	PROGRAMMING WITH VISUAL BASIC DOTNET				
Course Code	EBT04305				
Course Credits	L	T	P	TC	
	3	1	-	4	
Prerequisites	Visual Basic .NET (VB.NET) is an object-oriented computer programming language implemented on the .NET Framework. Although it is an evolution of classic Visual Basic language, it is not backwards-compatible with VB6, and any code written in the old version does not compile under VB.NET.				
Course Objectives	1. Introduction to computer programming using VB.NET. Emphasis on the fundamentals of structured design, development, testing, implementation, and documentation. Includes language syntax, data and file structures, input/output devices, and files.				
Course Contents	<p>UNIT – I : Introduction to .NET</p> <p>NET Framework features & architecture, CLR, Common Type System, MSIL, Assemblies and class libraries. Introduction to visual studio, Project basics, types of project in .Net, IDE of VB.NET- Menu bar, Tool-bar, Solution Explorer, Toolbox, Properties Window, Form Designer, Output Window, Object Browser. The environment: Editor tab, format tab, general tab, docking tab. visual development & event drive Programming -Methods and events.</p> <p>UNIT – II : The VB.NET Language</p> <p>Variables -Declaring variables, Data Type of variables, Forcing variables declarations, Scope & lifetime of a variable, Constants, Arrays, types of array, control array, Subroutines, Functions, Returning value from function. Control flow statements, conditional statement, loop statement. MsgBox & Inputbox.</p> <p>UNIT – III : Object oriented Programming</p> <p>Classes & objects, fields Properties, Methods & Events, constructor, inheritance. Access Specifiers, Friend, Overloading Vs Overriding, Interfaces, Polymorphism, Overview of OLE, Accessing the WIN32 API from VB.NET, Create User control, register User Control, access com components in .net application.</p> <p>UNIT – IV : Working with Forms</p> <p>GUI Programming with Windows Form: Textbox, Label, Button, Listbox, Combobox, Checkbox, PictureBox, RadioButton, Panel, Scroll bar, Timer, ListView, TreeView, toolbar, StatusBar. There Properties, Methods and events. OpenFileDialog, SaveFileDialog, FontDialog, ColorDialog, PrintDialog. Link Label. Designing menus, Context Menu, access & shortcut keys, System.io Namespace, Reading and Writing</p>				

	<p>data from and into files, File class and relatedMethods, Stream Reader, Stream Writer.</p> <p>UNIT – V : Databases in VB.NET</p> <p>Databases, Connections, Data adapters, and datasets, Data Reader, Connection to database with server explorer, Multiple Table Connection, Creating Command, Data Adapter and Data Set with OLEDB and SQLDB. Data Grid View, Data form wizard, Data validation, Connection Objects, Command Objects, Data Adapters, Dataset Class, Overview of ADO, from ADO to ADO.NET, Generate Reports Using Crystal Report Viewer.</p>
Course Outcomes	<ol style="list-style-type: none"> 1. Design, formulate, and construct applications with VB.NET. 2. Integrate variables and constants into calculations applying VB.NET. 3. Determine logical alternatives with VB.NET decision structures.
Text Books	<ol style="list-style-type: none"> 1. VB.NET Programming Black Book by Steven Holzner – Dreamtech Publications. 2. Mastering VB.NET by EvangelosPetroustos - BPB Publications.
Reference Books	<ol style="list-style-type: none"> 1. Introduction To.Net Framework –Work Publication. 2. Mastering Vb.Net by EvangelosPetroustos–BPB Publications.



SHRI RAWATPURA SARKAR UNIVERSITY, RAIPUR,

CHHATTISGARH

FACULTY OF COMPUTER SCIENCE & ENGINEERING

B.TECH Third Semester

Course Title	BASIC ELECTRONICS LAB				
Course Code	EBT04391				
Course Credits	L	T	P	TC	
	-	-	2	1	
Prerequisites	Basic knowledge about electronics.				
Course Objectives	<ol style="list-style-type: none">1. To learn basic concepts of semiconductors.2. To gain knowledge of applications of Diode and Transistor.				
Course Contents	<p>List of Experiments:</p> <ol style="list-style-type: none">1. To draw the characteristics of a semi conductor diode and to find cut-in voltage, reverse resistance, static resistance and dynamic resistance.2. To draw the characteristics of a zanier diode.3. To design a half wave rectifier and to determine its efficiency and ripple factor.4. To design a- full wave rectifier and determine the ripple factor and efficiency with filter.5. To design a- full wave rectifier and determine the ripple factor and efficiency without filter.6. To draw the characteristics of FET using BFW – 10.7. To draw the characteristics of CE configuration of a transistor amplifier.8. To draw the characteristics of CB configuration of a transistor amplifier.9. To draw the characteristics of CC configuration of a transistor amplifier.10. To design a Zanier regulator circuit and to find the regulation characteristics.				
Course Outcomes	<ul style="list-style-type: none">• Gain the knowledge of basics of semiconductor devices and their applications.• Apply concepts of Junction theory in designing and solving basic circuits.• Develop basic knowledge of PN junction diode, BJT and FET.• Implement transistor based circuits that are used in IC technology.				
Text Books	1. Laboratory Manual for Electronic Devices and Circuits, 4th Ed., David A. Bell, PHI.				

	2. Principal of electronic Author V.K Mehta &Rohit Mehta.
Reference Books	1. Basic electronic by M V Rao. 2. Basic electronic by ChinamoySaha.



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FACULTY OF COMPUTER SCIENCE & ENGINEERING

B.TECH Third Semester

Course Title	DATA STRUCTURES LAB				
Course Code	EBT04392				
Course Credits	L	T	P	TC	
	-	-	2	1	
Prerequisites	Know the classifications of data structures, i.e., linear and non-linear understand the basic operations on linear and non-linear data structures;				
Course Objectives	<ul style="list-style-type: none">• Explain the memory representation of all types of data structures• Explain how to implement the all kinds of data structures.				
Course Contents	<p>List of Experiments:</p> <ol style="list-style-type: none">1. Write a C program to take the radius of a sphere as input and print the volume and surface area of that sphere.2. Write a C program to take a 5-digit number as input and calculate the sum of its digits.3. Write a C program to print all prime numbers between a given ranges of numbers.4. Write a C program to define a macro that can calculate the greater of two of its arguments. Use this macro to calculate the greatest of 4 integers.5. Write a C program to define a recursive function that will print the reverse of its integer argument.6. Write a Program to check whether number is prime or not.7. Write a Program to implement Constructor and Destructor..8. Write a Program to implement Function Overloading.9. Write a Program to implement Operator Overloading.10. Write a Program to implement all types of Inheritance.11. Write a Program to exchange the contents of two variables by using<ol style="list-style-type: none">(a) Call by value,(b) Call by reference.12. Write a Program to read number and to display the largest value between:<ol style="list-style-type: none">(a) Two number,(b) Three Numbers.13. Write a program to perform following operations in one dimensional array,				

	<p>Insertion, Deletion and Searching (Linear & Binary).</p> <p>14. Write a program to implement stack and perform push and pop operations.</p> <p>15. Write programs to perform Searching operations.</p> <p>16. Write programs to perform Insertion, selection and bubble sort.</p> <p>17. Write a program to perform quick sort.</p> <p>18. Write a program to perform merge sort.</p> <p>19. Write a program to perform heap sort.</p> <p>20. Write a program to create a Binary search tree and perform –insertion, deletion & traversal.</p>
Course Outcomes	<ol style="list-style-type: none"> 1. Have a comprehensive knowledge of the data structures and algorithms on which file structures and data bases are based. 2. Be able to design and analyze the time and space efficiency of the data structure. 3. Be capable to identify the appropriate data structure for given problem. 4. Have practical knowledge on the applications of data structures.
Text Books	<ol style="list-style-type: none"> 1. “Data structure using C” by Samir kumarBandyopadhyay, KashiNathDey 2. “C and Data structures” by Ashok K Kamthane Pearson Education. 3. “An Introduction to Data Structures with Application” by Tremblay & Sorenson (TMH)
Reference Books	<ol style="list-style-type: none"> 1. “Fundamentals of Data Structure” by Horowitz &Sahni (Golgotia) 2. “Data Structures using C/C++” by Rajesh Shukla, Wiley India 3. “Data Structures using C” by ISRD Group (TMH) 4. “Data Structures using C/C++” by Langsam, Augenstein&Tananbaum (PHI) 5. “Data Structures & Program Design” by Robert L Kruse (PHI)



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FACULTY OF COMPUTER SCIENCE & ENGINEERING

B.TECH Third Semester

Course Title	PROGRAMMING WITH VISUAL BASIC DOTNET LAB				
Course Code	EBT04393				
Course Credits	L	T	P	TC	
	-	-	2	1	
Prerequisites	Basic knowledge of programming in C and Visual Basic.NET.				
Course Objectives	•Students should be apply their practical knowledge on C Program and Visual Basic. Net in programming system.				
Course Contents	<ol style="list-style-type: none">1. Toolbox, Properties Window, Form Designer, Output Window, Object Browser.2. The environment: Editor tab, format tab, general tab conditional statement, loops statement.3. MsgBox&Inputbox Form: Textbox, Label, Button, List box, Combo box, Checkbox,4. Picture Box, Radio Button, Panel, Scroll bar, Timer, List View, Tree View, Toolbar, and Status Bar.5. C Language - If, if-else, forms of if-else statement. Variables and Keywords.				
Course Outcomes	•After completion of this course the students will be able to apply their practical knowledge about C and VB.Net.				
Text Books	<ol style="list-style-type: none">1. Vb.Net Programming Black Book by Steven Holzner Dramatic Publications.2. Mastering Vb.Net by EvangelosPetroustos–BPB Publications.				
Reference Books	<ol style="list-style-type: none">1. Balagurusamy, E. (2008). Programming with C. New Delhi: Tata Mc-Graw-Hill.2. Kernighan, Brian W. &Ritchie, Dennis M. (1988). The C Programming				

Language ANSI C. Prentice.

1. Hall PTR 3 Singh, Minakshi&Singh, VishnuPriya.C Programming. Delhi: Asian Publisher.