B. Tech. CS Interacted

SYALLBUS -

1st sem.

Subjects

1.Applied Physics
2.Enggineering Drawing
3.Workshop (practical)
4. Workshop Technology
5.Trade Theory I:-

For mech. -R&AC+ Fitter+ Welder
For civil -Plumber + carpentry
For electrical -electrician
For electronics-radio & tv+ computer hardware
For computer -ITESM + copa +computer hardware

2nd Sem.

Subjects

1.Enggineering math
2.Enggineering drawing
3.Workshop (practical)
4.Workshop Technology
5.Trade Theory II :-

For mech. -R&AC +Fitter+ Welder
For civil -Plumber+ carpentry
For electrical -Electrician
For electronics-radio & tv+ computer hardware
For computer -ITESM+ Copa + computer hardware

Diploma III Sem.

Semester IIIrd

Sr.No.	Code	Name of Subject	L	P	U
1	DCSE 211	Programming in 'C'	**3**	**2**	**4**
2	DCSE 221	Computer Organization	**4**	**0**	**4**
3	DCSE 231	Operating System Principles	**4**	**0**	**4**
4	DCSE 241	Electronic Devices and Circuits	**3**	**2**	**4**
5	DCSE 251	Digital Electronics	**3**	**2**	**4**
6	DCSE 261	Basic Communication Engineering	**3**	**2**	**4**
7	DCSE 271	Numerical Analysis	**3**	**2**	**4**

Diploma 3rd Sem.

Code CS 31 Programming in C

a. Introduction
b. Elements of C
c. Console Input-Output
d. Control Flow
e. Arrays
f. Functions
g. Pointers
h. Structure, Union and Enumerated Data Types.
i. File Handling

Code CS 32 Computer Organisation

a. Overview of Computer Organisation
b. Register and Micro-Operations
c. Basic computer organization
d. Control Logic
e. Central Processing Unit
f. Arithmetic Processor Organisation
g. Input/Output Organisation
h. Memory Organisation

Code CS 33 Operation system Principles

a. Introduction
b. CPU Scheduling
c. Deadlocks
d. Memory management and Virtual Memory
e. Operating System Services and File System
f. Disk Scheduling

Code CS 34 Electronic Devices and Circuits

a. Vacuum Tubes
b. Semiconductor and PN Junction
c. Bipolar Junction Transistor
d. Transistor Biasing and Bias Stability
e. Small Signals Transistor Amplifier
f. Field Effect Transistor
g. Rectifiers and Power Supplies

Code CS 35 Digital Electronics

a. Introduction
b. Number System
c. Logic Gates
d. Logic Families
e. Boolean Algebra
f. Minimization Techniques (K-Mapping)
g. Combinational Logic Design
h. Sequential System

Code CS 36 Basic Communication Engineering

a. Introduction
b. Noise and Cross Talk
c. Amplitude Modulation
d. Frequency Modulation
e. Radio Receivers

Code CS 37 NUMERIC ANALYSIS

a. Introduction
b. Interpolation
c. Numerical Calculus
d. Solution of Equation
e. Matrix

Semester IVth

Sr.No.	Code	Name of Subject	L	P	U
1	DCSE 212	Data Structures Through 'C'	**3**	**2**	**4**
2	DCSE 222	System Programming	**3**	**2**	**4**
3	DCSE 232	Modern Operating System	**4**	**0**	**4**
4	DCSE 242	Database Management System	**4**	**0**	**4**
5	DCSE 252	Introduction to Microprocessor	**3**	**2**	**4**
6	DCSE 262	Data Communication	**4**	**0**	**4**
7	DCSE 272	PC Maintenance & Trouble Shooting	**3**	**2**	**4**

Diploma 4th Sem.

Code CS 41 Data Structures Through C

a. Introduction
b. Memory Allocation
c. Linked List
d. Stack
e. Queue
f. Tree
g. Graphs
h. Sorting and Searching

Code CS 42 System Programming

a. Introduction
b. Assemblers
c. Macro Assemblers
d. Linkers and Loaders
e. Compliers

Code CS 43 Modern Operating System

a. Distributed Operating System
b. Communication in Distributed System
c. Processes and Synchronization/Co-ordination.
d. Distributed File System
e. Protection and Security Issues
f. Real Time OS

Code CS 44 Data Base Management System

a. Introduction
b. Entity Relationship Model
c. Relational Model
d. Integrity Constraints
e. Relational Database design
f. Indexing and Hashing
g. Transaction
h. Protocols
i. Recovery System

Code CS 45 Introduction to Microprocessor

a. Introduction
b. 8086 Microprocessor
c. Addressing Modes
d. Instruction Set
e. Data Transfer Schemes
f. Memory Interfacing with 8086
g. Programmable Chips and Interfacing with 8086
h. Bus Standard
i. Brief Introduction of other Microprocessor

Code CS 46 Data Communication

a. Introduction
b. Data Transmission
c. Data Encoding
d. Data Communication Interface
e. Data Link Control
f. Multiplexing
g. Circuit Switching
h. Packet Switching
i. Frame Relay

Code CS 47 PC Maintenance and Trouble Shooting

a. Site Preparation
b. Safety and Security Measures
c. Study of Construction Operation and Interfacing of the following devices.
d. Hardware and Software Installation.
e. Motherboard and BIOS
f. Troubleshooting of Hardware and software Problems.
g. Servicing of Peripherals.

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Semester Vth

Sr.No.	Code	Name of Subject	L	P	U
1	DCSE 311	Object Oriented Programming	**3**	**2**	**4**
2	DCSE 321	System Analysis and Design	**4**	**0**	**4**
3	DCSE 331	Computer Networks	**4**	**0**	**4**
4	DCSE 341	Advanced Database Management System	**3**	**2**	**4**
5	DCSE 351	Visual Programming	**3**	**2**	**4**
6	DCSE 361	Computer Graphics	**4**	**0**	**4**
7		Practical Training (24 Days)			

Diploma 5th Sem.

Code CS 51 Object oriented Programming

a. An overview of Object Oriented Programming
b. Object oriented programming using C++.
c. Objects and Classes
d. Inheritance, Polymorphism, Reusability Concepts.
e. Exception Handling.
f. Data Structures in C++
g. Files and Streams.

Code CS 52 System Analysis and Design

a. Introduction
b. The System Development Life Cycle and System Analyst.
c. System Analysis
d. System Design
e. System Implementation
f. Security and Recovery in System Development

Code CS 53 Computer Networks

a. Computer Network and the Internet
b. Application Layer
c. Transport Layer
d. Network Layer and Routing
e. Link Layer and Local Area Networks

Code CS 54 Advance Database Management System

a. Introduction
b. Database System Architecture
c. Structured Query languages (SQL)
d. PL/SQL

Code CS 55 Visual Programming

a. Introduction with Visual Basic
b. Elements of the Visual Basic Languages
c. Working with Forms
d. Basic ActiveX Controls
e. Database Programming with Visual Basic
f. Object Programming with Visual Basic

Code CS 56 Computer graphics

a. Overview of Graphics System
b. Output primitives
c. Geometric Transformation
d. 2-D Viewing
e. 3-D Geometric Transformations and Viewing

Code CS 57 Unix and Shell Programming

a. Unix An Introduction
b. File System
c. Unix Commands
d. vi-Editor
e. Unix Shell
f. Filters
g. Shell Programming

Code CS 571 Human Computer Interaction

a. Importance of Interfaces
b. User Interface Design
c. Interaction Styles
d. Guidelines for Designing
e. Future Trends.

Code CS 572 Computer Business system

a. Business Data Processing
b. Business Files
c. Design Analysis and Development of
d. FoxPro

Semester VIth

Sr.No.	Code	Name of Subject	L	P	U
1	DCSE 312	Design and Analysis of Algorithms	**4**	**0**	**4**
2	DCSE 322	Software Engineering	**4**	**0**	**4**

3	DCSE 332	Advanced Computer Architecture	**4**	**0**	**4**
4	DCSE 342	System Administration	**3**	**2**	**4**
5	DCSE 352	Programming in Java	**3**	**2**	**4**
6	DCSE 362	Computer and Network Security	**4**	**0**	**4**
7		Practical Training (24 Days)			

Diploma 6th Sem.

Code CS 61 Design and Analysis of Algorithms

a. Introduction
b. Design Techniques
c. Complexity Measures

Code CS 62 Software Engineering

a. Introduction
b. System Analysis
c. Requirement Analysis
d. Structured Design
e. Approaches to System Design

Code CS 63 Advanced Computer Architecture

a. CISC Architecture Concepts
b. RISC Architecture concepts
c. Pipelining
d. Memory Hierarchy and Organization
e. Parallel Organization and Architecture

Code CS 64 System Administration

a. Introduction to System Administration
b. Essential Administrative Tools
c. Startup and Shutdown
d. User Account
e. Security
f. Managing System Resources
g. Backup and Restore
h. Setting up E-Mail and Proxy server

Code CS 65 Programming in Java

a. An overview of Java
b. Introduction of OOP using Java
c. Packages
d. Interfaces and Inner Classes
e. Exception handling
f. Multithreaded Programming
g. Introduction to Java Library
h. Applet and event handling
i. Introduction to RMI, JBDC and Servlets.

Code CS 661 Data Base Administration

a. Database Administration
b. Backup and Recovery
c. Performance Tuning
d. Network Administration

Code CS 662 Computer and network Security

a. Introduction
b. User Authentication and Passwords
c. File Security
d. Protecting Against Threats
e. Network Security

Code CS 663 Computer and Network Security

a. AI Concept
b. Neural Networks
c. Fuzzy Logic
d. Evolutionary Computing

Code CS 671 Management

a. Principles of Management
b. Human resources Development
c. Wages and Incentives
d. Material Management
e. Financial Management
f. Marketing Management
g. Tax System and Insurance
h. Labour Legislation and Pollution Control Acts.
i. Entrepreneurship Development

Code CS 672 Entrepreneurship Development

a. Entrepreneurship
b. Industrial Policy
c. Entreprencurial Development
d. Entreprenurship Support System
e. Setting up SSI
f. Raw material Management
g. Marketing facilities
h. Financial Sources for SSI
i. Contracts and Tenders
j. Project Report
k. Iso : 9000 Series of Quality System

Code CS 673 Production System Management

a. Introduction
b. new Product Design
c. Demand Forecasting
d. production Planning and Control
e. Capacity Planning
f. Material requirement Planning
g. Process Planning
h. Production
i. Make or Buy Decision
j. Application of LPP in Production Management
k. Group technology
l. Just in time Manufacturing.

Semester Vth

Sr.No.	Code	Name of Subject	L	P	U
1	BTCSE311	Computer Programming –II	**4**	**0**	**4**
2	BTCSE312	Computer Organization and Architecture	**3**	**2**	**4**
3	BTCSE313	Database Management System	**3**	**2**	**4**
4	BTCSE314	Microprocessor	**3**	**2**	**4**
5	BTCSE315	Discrete Structure for Computer science	**4**	**0**	**4**

Semester 5th

Computer Programming – II (C++) (Code BTCSE311)

1. **Concept of OOP and POP.**
2. **Introduction of C++.**
3. **Elements of C++**
   a. Character Set
   b. Key Words
   c. Data Types
   d. Constants and Variables
   e. Operators unary, binary, ternary
   f. Operator precedence

4. **Control Flow :**
   a. Statements and blocks
   b. if
   c. Switch
   d. Loops : For, While, Do-While

5. **Arrays :**
   a. Basic Concepts
   b. Memory Representation
   c. One Dimensional Array
   d. Two Dimensional Array
   e. Three Dimensional Array

6. **Functions :**
   a. Basic concept

b. Declaration and prototype
c. Calling
d. Arguments

7. **Pointers :**
   a. Basic Concepts
   b. &,* operator
8. **Structure, Union and Enumerated Data Types**
   Basic Concepts, reference operator, structure with array
9. **File Handling :**
   a. Types of Files
   b. File Organization
   c. Opening, Reading, Writing, Closing
   d. Text and binary file
10. **Class :** Declaration, Definition, use of scope resolution operator

Computer Organization & Architecture (Code BTCSE312)

Number systems and machine representation, Boolean algebra, combinational and sychronous sequential circuits, logic minimisation, programmable logic devices, state table and state diagrams, digital integrated circuits, asynchronous circuits, arithmetic operations and algorithms, introduction to computer organisation and architecture, speed considerations, memory organisation, I/O design, implementation issues. The course will also consist of laboratory practice.

Data Base System (Code BTCSE313)

Introduction to data bases and management; data files and structures; File vs database, information, relationship in data model, hierarchical, relational, network models; distributed data bases; query processing and query optimization, query languages; concepts of security and protection; SQL and its component, Normalization

Microprocessor Programming & Interfacing (Code BTCSE314)

Elements of digital electronics; PC organization; 80X86 as CPU : Instruction set register set, timing diagrams, modular assembly programming using procedures & macros, assembler, linker & loader concepts; concept of interrupts: hardware interrupts, software interrupts, BIOS and DOS interrupts; disk organization: boot sector, boot partition, root directory & FAT; memory interfacing & timing diagrams; I/O interfacing; programmable I/O devices such as 8255, 8253, 8259, etc.

Discrete Structure For Computer Science (Code BTCSE315)

Introduction to discrete mathematical structures; Formal logic and predicate calculus; sets; relations and functions; proof techniques; graphs and trees; primes factorization, greatest common

divisor, residues and application to cryptology; Boolean algebra; permutations, combinations and partitions; recurrence relations and generating functions; introduction to error correcting codes; formal languages and grammars, finite state machines.

Semester VIth

Sr.No.	Code	Name of Subject	L	P	U
1	BTCSE321	Advanced Computer Architecture	**4**	**0**	**4**
2	BTCSE322	Theory of Computation	**3**	**2**	**4**
3	BTCSE323	Computer networks	**3**	**2**	**4**
4	BTCSE324	Digital Communication/Oracles	**4**	**0**	**4**
5	BTCSE325	Programming language (Java)	**4**	**0**	**4**
6	BTCSE326	Practical Training for 45 Days	**3**	**2**	**4**

Semester 6th

Advanced Computer Architecture (Code BTCSE 321)

Introduction to advanced architectures; parallel processing; pipelining and vector processing; array processing; SIMD computers and processor enhancement; performance evaluation methods, statistics and discrete math applications; modelling for evaluation of virtual memory; time sharing environments.

Theory Of Computation (Code BTCSE322)

Finite automata and regular languages – equivalences, closure properties. context free languages & push-down automata – equivalences, closure properties, concepts in parsing; turing machines; computability & decidability – universal turing machine, recursive functions, church-turing hypothesis; complexity classes – P, NP, reducibility and NP-completeness.

Computer Networks (Code BTCSE323)

Evolution of communication and computer networks, protocol layering, network reference models, multiple access protocols, local area networks, packet and circuit switching, switching fabrics, network performance analysis and simulation techniques; addressing, routing, flow and congestion control, IP protocol; Broadband Integrated Services Digital Network (B-ISDN); Asynchronous Transfer Mode (ATM) reference models; network interoperability, traffic management and quality

of service in integrated network protocol design and implementation strategies

Digital Communication (Code BTCSE324)

Introduction, the modeling and characterization of information sources, algorithms for source coding and encoding of analog, output sources, information transmission through AWGN channels using digital modulation methods and BER estimation, Digital communication through band limited Gaussian noise channels; channel coding and decoding, wireless communication channels, its characterization and modulation schemes for such channels, emerging trends in the above field.

Programming Languages (Java) (Code BTCSE325)

The Java Language

Overview – Object Oriented Programming, Abstraction, Three OOP Principal – Encapsulation, Inheritance, Polymorphism,
Date Types - Integers (byte, short, int, long)
Floating Point – float, double
Characters, Booleans
Variables – Declaring, Initialization, Scope & Lifetime
Arrays - One-Dimensional Arrays, Multidimensional Arrays
Operators - Arithmetic Operators, The Bitwise Operators, Relational Operators, Boolean Logical Operators, The Assignment Operator, The ? Operator, Operator Precedence
Ctrl Statements: Selection Statements (If, switch)
Iteration Statement (while, do-while, for)
Jump Statements (break, continue, return)

More Java

Classes - Fundamentals, Declaring Objects, Assigning Object Reference Variables, Constructors
Methods - Adding Methods, Methods Overloading, Nesting Methods
Inheritance - Defining Subclass, Subclass Constructor, Multilevel Inheritance, Hierarchical inheritance
Packages - Putting Classes Together

Interfaces- Defining Interfaces, Extending Interfaces, Implementing Interfaces, Accessing Interface Variables

Semester VIIth

Sr.No.	Code	Name of Subject	L	P	U
1	BTCSE411	Operating system	**4**	**0**	**4**
2	BTCSE412	Computer Graphics	**4**	**0**	**4**
3	BTCSE413	Compiler Construction	**4**	**0**	**4**
4	BTCSE414	Software Engineering	**3**	**2**	**4**
5	BTCSE415	Programming Language	**4**	**0**	**4**

Semester 7th

Operating System (Code BTCSE 411)

Introduction to operating systems; Various approaches to design of operating systems; Overview of hardware support for operating systems; Process management: process synchronization and mutual exclusion, interprocess communication, process scheduling; CPU scheduling approaches; Memory management: paging, segmentation, virtual memory, page replacement algorithms; File systems: design and implementation of file systems; Input/Output systems; device controllers and device drivers; Security and protection; Case studies on design and implementation of operating system modules.

Computer Graphics (Code BTCSE412)

Generation of dots, lines, arcs and polygons; color graphics, shades and levels; image transformation, windowing and clipping; 2-D and 3-D graphics; data structures, algorithms and optimization methods; case studies using GKS, CORE, etc; graphic languages and compilers.

Compiler Construction (Code BTCSE413)

Overview of programming languages concepts and constructs, programming paradigms; Introduction to compiler process, phases and passes, bootstrapping of compilers; Formal languages, grammars and abstract machines; Lexical analysis, regular expressions and finite automata; Context-free grammar and push-down automata; Recursive-descent, LL and LRparsers; Semantic analysis, attribute grammar, type checking, intermediate representation; Run-time environments; Code optimization and code generation.

Software Engineering (Code BTCSE414)

Introductory Concepts: Historical perspective, System Definition, Software Life Cycle, Software Engineering paradigms.

System analysis: Feasibility study requirement analysis, Cost benefit analysis, Planning systems,

Analysis tools and techniques.

System Design: design fundamentals, Modular Design, Data and procedural design, object oriented design.

System Development: Code documentation, Program design paradigms, Efficiency Consideration.

Verification, Validation and Testing: testing methods, Formal Program Verification, Testing Strategies.

Software Maintenance: Maintenance Characteristics, Maintainability, Maintenance tasks and side effects.

Programming Language (Visual Basic) (Code BTCSE415)

INTRODUCTION TO VISUAL BASIC

User Interface, Controls, Drawing Objects on the form, Object naming conventions, Event Procedures

PROGRAMMING FUNDAMENTALS

Variables, Data Types, Modules, Procedures, Control Structures, Control Array, Arrays, Functions

MENUS, MDI AND DATA FILES

Menu Editor, Writing Code for Menu Controls, Dialog Boxes, MDI Application, Menus in MDI Applications, Adding Status Bar, toolbar, Data Files

ACCESSING DATABASES

Creating Database, Accessing Databases, Data Control, DAO, ADO
Adding bookmark, adding field, retrieve data from table using ADO data control.

REPORT/API/HELP/SYSTEM FUNCTIONS

Creating Reports – Connection, Commands, Windows API, IIS

Application, Library Functions

Semester VIIIth

Sr.No.	Code	Name of Subject	L	P	U
1	421	Practical Training for 6 Month a. Project b. Seminar	**4**	**0**	**4**