

Computer Application(BCA)

PROGRAM SPECIFIC OUTCOME

PSO 1. Focuses on preparing students for roles pertaining to computer Applications and IT Industry.

PSO2. Developing programming skills, networking skills, packages, programming languages and modern techniques of IT.

PSO3. Professional skills: Attain the ability to design and develop computer applications, evaluate and recognize potential risks and provide innovative solutions.

PSO4. Successful Career and Entrepreneurship: Explore technical knowledge in diverse area of Computer Applications and experience an environment conducive in cultivating skills for successful career, entrepreneurship and higher studies.

PSO 5. Evolve as globally competent computer professionals possessing leadership skills for developing innovative solutions in multidisciplinary domain.

PSO 6. A few of them being like Software Programmer, System and network Administrator, Web Designer, faculty of Computer Science and Applications.

PSO7. Students can develop static and dynamic websites using web technologies such as HTML, CSS, ASP.Net, PHP and JAVA Script and providing connectivity with backend using Databases such as MS Access, SQL.

COURSE OUTCOME

BCA SEMESTER – I

COURSE NAME : Computer Fundamentals [Paper-

I]

COURSE OUTCOMES :

CO1 : Bridge the fundamental concepts of computers with the present level of knowledge of the students & Understand binary ,octal and hexadecimal number systems and their arithmetic

CO2 : Understanding the concepts of Memory and its types and working

CO3 : Understanding the concept of input and output devices of Computers and how it works and recognize the basic terminology used in computer programming

CO4 : Familiarize concepts of Network terminology , Types of Networks and Network Protocol

COURSE NAME : “C” Programming [Paper- II]

COURSE OUTCOMES :

- CO1 : Students will be able to understand the C programming structure and problem solving methodologies.
- CO2: Students will acquire the detailed knowledge about the tokens, operators, strings, selection statements and looping statements.
- CO3: Students will be able to learn about the arrays, strings and functions.
- CO4: Students will be able the understand the concept of structure, union, pointer and file handling.

COURSE NAME : STATISTICAL METHODS

[Paper- III]

COURSE OUTCOMES:

- CO1 : Evaluate the probabilities and conditional probabilities.
- CO 2: Approximate the distribution of sum of random variable.
- CO 3: Calculate the number of samples needed to construct mean and variance of a normal distribution.
- CO 4: Use linear regression analysis to develop an empirical model of experimental data and ability to design and conduct experiments as well as to analyze and interpret data.

COURSE NAME : DISCRETE MATHEMATICS – I [Paper- IV]

COURSE OUTCOMES:

- CO1:- Students will be able to understand and solve the problems on logical connectives, well-formed formulas, equivalence of formula and duality law
- CO2:- Students will able learn and analyze conjunctive normal form and dis-junctive normalform.
- CO 3:- Students will be able understand theory of statement calculus and rules of inference
- CO 4 :- Students will be able to understand the theory predicate calculus

COURSE NAME : OPERATING SYSTEMS [Paper- V]

COURSE OUTCOMES:

- CO 1:- Fundamental understanding the role, function and services of operating system, Process and CPU Scheduling Algorithm.
- CO 2:- Students will gain the knowledge about the concepts of deadlock in operating system and how they Can be managed /avoided and implement them in multithreading system.
- CO 3:-Students would be able to categorize the difference between different process, thread and multi- Threading.
- CO 4:- Student will have acquired the knowledge about the memory management & the different types I/O management.

COURSE NAME : OFFICE AUTOMATION [Paper- VI]

COURSE OUTCOMES:

- CO 1. Students were able to understand working of windows operating system and got expertise in handling various windows operations & utilities
- CO2. Students were able to Create effective & efficient word documents using various Feature of word.
- CO 3. Students were able to create different spreadsheet like mark list, attendance sheet, balance sheet, budget .also they were able to create various charts
- CO 4. Students were able to create effective power point presentation with various design and animation effects

BCA SEMESTER – II

COURSE NAME : PROGRAMMING IN C++ [Paper- I]

COURSE OUTCOMES:

- CO1 : Students will be able to understand the object oriented methodologies and the concept of classes and objects in detail.
- CO2: Students will acquire the detailed knowledge about the constructors, destructors and operator overloading.
- CO3: Students will be able to learn about pointer to objects and inheritance.
- CO4: Students will be able to understand the concept of virtual function and exception handling.

COURSE NAME : SYSTEM ANALYSIS AND DESIGN [Paper- II]

COURSE OUTCOMES:

- CO1 : The students learned about the system, the steps for building the system, the economic, technical and operational feasibility of the system. They learned and understand the different data collections methods for the system such as interviews, questionnaires and onsite observation.
- CO2 : The students studied the Data Flow Diagram and the other tools required to design the system.
- CO3 : The implemented system tested using different testing methods, such as unit testing, integration testing, white box testing, black box testing etc.
- CO4 : Explore the technical risks involved in the system's and technical possibilities. Scheduling with using GANTT and PERT techniques. Evaluates the economic self-sufficiency whether to install the system.

COURSE NAME : NUMERICAL METHODS[Paper- III]

COURSE OUTCOMES:

- CO1:- To understand how to solve Algebraic equation, Polynomial equation, Transcendental equation.
- CO 2:- To Comprehend with Gauss Elimination Method, Gauss elimination with pivoting, Gauss Jordan Method
- CO 3:- Students will be able understand Interpolation with equidistant points, Least Square regression Fitting
- CO 4 :- Students will be able to solve problems on Trapezoidal Rule, Simpson 1/3 Rule, Simpson 3/8 rule

COURSE NAME : DISCRETE MATHEMATICS – II [Paper- IV]

COURSE OUTCOMES:

- CO1:- To understand and solve the problems related to relations and functions.
CO 2:- To Comprehend with Functions, Counting, recurrence relation and Mathematical induction.
CO 3:- Students will be able understand Algebraic Structures like semi group, group and Lattices.
CO 4 :- Students will be able to solve problems on graph theory .the Graph theory has application in various field of computer science like, Computer Graphics ,Data Structure, Artificial Intelligence etc.

COURSE NAME : LINUX OPERATING SYSTEM [

PAPER- V]

COURSE OUTCOME

- CO1 : Students able to identified and used Linux utilities to create and manage simple file processing operations, organize directory structures with appropriate security, and develop shell scripts to perform more complex tasks.
- CO2 : Students effectively used the Linux Operating system to accomplished typical personal, office, technical, and software development tasks.
- CO3 : Students able to choose appropriate Linux operating system commands to make effective use of the environment and write efficient, effective scripts with documentation to solve problems
- CO4 : To understand Managing disk space environment, Communication Utilities commands, X Window System, Graphical User Interfaces like KDE and GNOME Desktop Environment.

COURSE NAME : E-COMMERCE [PAPER- VI]

COURSE OUTCOME

- CO1 : The students learned the impact of information and communication technology specially of the internet in business operation.
- CO2 : The students learned analyzing branding and pricing strategies and they also learned determining the effectiveness of market search. They also learned internet trading relationship including Business to Consumer, Business to Business and intra organizational.
- CO3 : The students learned how to be aware of the ethical, social and security issues of information system.
- CO4: The students learned the insight on how to implement strategy in the new economy. Provide analytical tools to understand the opportunities in un-served and new economy market

BCA SEMESTER – III

COURSE NAME : VISUAL BASIC PROGRAMMING [PAPER- I]

COURSE OUTCOMES:

- CO1 : Students acquired the skills and knowledge required to use essential features and capabilities of Visual BASIC, a programming system used to produce Graphical User Interfaces and applications in a Windows environment & Students studied basic programming concepts, problem solving, programming logic, and the design of event-driven programming.
- CO2 : Understanding concepts of Arrays , Procedures , Functions and Modules with programming paradigms
- CO3: Understanding how to Develop menus with its items, Creating Pop-up menus and database handling with DAO control and its connectivity.
- CO4 : Understanding ADO data control , Working with Advanced Data Controls and debug applications using Visual Basic Programming that runs under Windows operating system.

COURSE NAME : DATABASE MANAGEMENT SYSTEM

[PAPER- II]

COURSE OUTCOMES:

- CO 1:- Students will be able to analyze data base architecture, different types of data model, Analyze the difference between the traditional file system and DBMS.
- CO 2:- Students will Acquire Knowledge Students will be able Draw various data model using ER modeling for real life applications.
- CO 3:-. Students will gain knowledge to construct queries mathematically through relational algebra
- CO 4:- Students will be data to keep the data in accurate, consistent form by having the knowledge of Normalization .

COURSE NAME : DATA STRUCTURE [PAPER- III]

COURSE OUTCOMES:

CO1: Students will learn about storing data in computers memory for getting efficient access to Programs and also the concept of linked list.

CO2: Students will acquire the detailed knowledge about the stack and recursion.



CO3: Students will be Able to learn about the queue, searching and sorting.

CO4: Students will be able to learn and implement the non-linear data structures such as trees and graphs.

COURSE NAME : OPERATION RESEARCH-I [PAPER- IV]

COURSE OUTCOMES:

CO 1 : Formulate a real world problem as a mathematical programming model, Solve linear programming problems using appropriate techniques and optimization solvers, interpret the results obtained.

CO 2. Determine optimal strategy for Minimization of Cost of shipping of products from source to Destination/ Maximization of profits of shipping products using various methods, Finding initial basic feasible and optimal solution of the Transportation problems

CO 3. Understand the relationship between a linear program and its dual.

CO 4 Optimize the allocation of resources to Demand points in the best possible way using various techniques and minimize the cost or time of completion of number of jobs by number of persons.

COURSE NAME : WEB TECHNOLOGY-I [PAPER- V]

COURSE OUTCOMES:

CO1: Understand Internet basics, including its history, working, and search engine usage.

CO2: Learn HTML for creating web pages with links, formatting, tables, forms, frames, and images.

CO3 : Familiarize with browsers, emails, and basics of Dynamic HTML (DHTML) for interactive web pages.

CO4: Gain knowledge of Cascading Style Sheets (CSS) for styling web pages and applying styles to HTML elements.

COURSE NAME : DIGITAL ELCTRONICS-I [PAPER- VI]

COURSE OUTCOMES:

CO1: Students will be able to understand in detail the different number systems and also the different binary codes.

CO2: Students will acquire the detailed knowledge about the data representations and binary arithmetic.

CO3: Students will be able to learn about the truth table, properties and symbolic representation of different logic gates.

CO4: Students will be able to learn Boolean algebra and K-map..

BCA SEMESTER – IV

COURSE NAME : SOFTWARE ENGINEERING – I [PAPER- I]

COURSE OUTCOMES:

- CO1: The students learned the ability to work Significantly in all application domain from System Software to Embedded software to Artificial Intelligence and Robotics.
- CO2: They learned how to apply the software engineering lifecycle by Demonstrating the use of requirement analysis from Communication, Planning, Analysis design, Construction and Deployment.
- CO3: They learned to demonstrate and ability to use the techniques tools necessities for engineering practice and to work as an individual and as a part of multidisciplinary team to deliver quality software.
- CO4: They identified the appropriate design pattern to solve object oriented design problem and construct design solution by using behavioral patterns.

COURSE NAME : SQL AND PLSQL [PAPER- II]

COURSE OUTCOMES:

- CO 1:- Student will be able to Understand and handle different database languages and make the table and implement the queries.
- CO 2:- Students will be able to Design and implementation the concept of views.
- CO 3:- Students will be able to handle Procedure, Cursor, and Exception handling.
- CO 4:- Students will be able to deal with Functions, Triggers.

COURSE NAME : THEORY OF COMPUTATION [PAPER- III]

COURSE OUTCOMES:

- CO1: Students will learn about DFA (Deterministic Finite Automata) and NFA (Non-Deterministic Finite Automata). They also learned about regular expressions and applications of finite automata.
- CO2: Students will acquire the detailed knowledge about the Properties of regular sets, pumping lemma for regular sets and context free grammar..
- CO3: Students will be able to learn about the closure properties of context free languages, Chomsky Normal Form and Greibach Normal Form .
- CO4: Students will be able to learn and implement the PushDown Automata.

COURSE NAME : OPERATION RESEARCH-II [PAPER- IV]

COURSE OUTCOMES:

- CO 1 : To be able to solve theory of games, using Dominane and Graphical Method
- CO 2 : Solving network models like shortest path, Formulate Network models for service and manufacturing systems, and apply operations research techniques and algorithms to solve these Network problems
- CO 3 : To be able to categorize the types of inventory, control the inventory using price break, find the EOQ of the inventory.
- CO 4 : To be able to classify and characterize the queuing system, solve for the types of queuing system.

COURSE NAME : WEB TECHNOLOGY-II [PAPER- V]

COURSE OUTCOMES:

- CO1: Understand JavaScript basics, including variables, operators, loops, events, and working with forms and images.
- CO2: Gain knowledge of JSP lifecycle, JSP tags, expressions, directives, and JavaScript security in web development.
- CO3: Acquire proficiency in VBScript, including data types, arrays, conditional statements, and basic website management.
- CO4: Understand web services, including SOAP-based and REST-based concepts, standards, and programming

COURSE NAME : DIGITAL ELCTRONICS-II [PAPER- VI]

COURSE OUTCOMES:

- CO1. The students learned about the construction and working of Adder, subtractor, multiplexer, demultiplexer, decoder, encoder, Flip flops, counters and shift register.
- CO2. The students learned about block diagram and pin diagram of 8086 microprocessor and the detail working of 8086.
- CO3. The students first understood the instruction and the assembler directives set used in 8086.
- CO4. They executed the programs in MASM assembler. After executing the programs, the students understood the difference between Assembly level, machine level and high level programming languages.

BCA SEMESTER – V
COURSE NAME : COMPUTER GRAPHICS- I [
PAPER- I]

COURSE OUTCOMES:

- CO1. List the basic concepts used in Computer Graphics.
- CO2. To implement various algorithms, to scan convert the basic geometrical primitives, transformation, Area filling and clipping.
- CO3. To describe the importance of viewing and transformation.
- CO4. To define fundamentals of animation and To understand typical graphics pipeline.

COURSE NAME : COMPILER CONSTRUCTION [
PAPER-II]

COURSE OUTCOMES:

- CO1: Analyzing the structure of a compiler, Lexical Analysis, Syntax analysis, Intermediate code Generation, Optimization, Code Generation
- CO2: Understanding about the High Level programming language and the lexical and syntactic structure of a language, Storage management.
- CO3: Implementation of lexical analyzer, Context free grammars, Derivations and parse trees, Ambiguous grammar.
- CO4: Acquiring knowledge about the principal source optimization, Loop optimization, The DAG representation of basic blocks.

COURSE NAME : VB.NET [PAPER-III]

COURSE OUTCOMES:

- CO1.** The student will able to learned .Net frameworks contain three major parts: common language runtime, the framework class library and ASP.Net. .Net provides the language interoperability because of which each language can be used in other languages. It mainly supports C#, VB, J# etc. They learned about Microsoft Visual Studio IDE for developing the .Net framework applications.
- CO2.** Students will learned about implicit & explicit interface design and implements by understanding the concept of interfaces like ICloneable, IComparable etc.
- CO3.** Students learned how to design user interfaces using menus, toolbars and MDI application by taking real life examples like stop watch, designing of standard & scientific calculators, measurement converters of mass, temperature, volume, length etc.
- CO4.** Ability to understand Advanced Interface Patterns, Adapters, Delegates & Events Error Handling & Prevention and Structured Exception Handling & debugging

COURSE NAME : SOFTWARE ENGINEERING – II [PAPER- IV]

COURSE OUTCOMES:

CO1 : The students able to Understand the software architecture and build the system from the component.

CO2 : The students learned to test the software without the knowledge of internal structure of program or application.

CO3 : Students understand about Software Quality, Metrics for Analysis Model, Metrics for Design Model, Metrics for source code, Metrics for testing, Metrics for maintenance.

CO4 :Understanding about Quality concepts, Software quality assurance and Software quality Assurance

COURSE NAME : PHP – I [PAPER- V]

COURSE OUTCOMES:

CO1: Understand the basics of PHP, including its purpose, history, installation, data types, variables, and flow-control statements.

CO2: Develop skills in using PHP functions, including defining functions, variable scope, and working with strings.

CO3: Acquire proficiency in working with arrays in PHP, including indexed and associative arrays, data storage, and manipulation.

CO4: Learn to handle form controls in PHP, including text fields, checkboxes, radio buttons, and file uploads.

COURSE NAME : DCN – I [PAPER- V]

COURSE OUTCOMES:

CO1 :Students will able to understand the fundamental concepts of computer networking
To understand Data Transmission and Data Encoding Techniques

CO2 : Students get familiarized with Digital Data Communication: detection technique, Interfacing, Data Link Control and Multiplexing

CO3 : Student will able to understand circuit Switching Single Node network, Digital switching concept, Control Signaling.

CO4 : Understand the concepts of Packet Switching, Routing, Traffic control, X.25. LAN,MAN technology Topologies, Medium Access Control Protocols, LAN/MAN standards.

BCA SEMESTER – VI

COURSE NAME : COMPUTER GRAPHICS- II [PAPER- I]

COURSE OUTCOMES:

CO 1 – Explain the applications, areas, and graphic pipeline, display and hardcopy technologies.

CO 2 – Apply and compare the algorithms for drawing 3D images also explain aliasing, anti aliasing and half toning techniques.

CO 3– Analyze and apply clipping algorithms and transformation on 3D images and Solve the problems on viewing transformations and explain the projection and hidden surface removal algorithms..

CO 4 –Explain basic ray tracing algorithm, shading, shadows, curves and surfaces and also solve the problems of curves and Explain the applications, areas, and graphic pipeline, display and hardcopy technologies.

COURSE NAME : PROGRAMMING IN JAVA[PAPER- II]

COURSE OUTCOMES:

CO1 : Students will able to understand concept of Object Oriented Programming & Java Programming Constructs and Students will able to understand basic concepts of Java such as operators, classes, objects, inheritance, packages, Enumeration and various keywords.

CO2 : Students will able to understand the concept of creating class , object, Methods,Method Overloading, Inheritance, Constructor overloading and and Input/ Output operations.

CO3 : Students will able to design the applications of Java ,Packages ,threads,Java applet and analyze ,design the concept of Event Handling and Abstract Window Toolkit, exception handling

CO4: To understand concepts of Event, Graphics Class, Streams AWI Applications,Componenets & Controls,Menus,Image and Layouts .

COURSE NAME : ASP.NET [PAPER- III]

COURSE OUTCOMES:

CO1. Students learned about XML programming, XML schema, DTD, embedding XML with CSS with real life examples. They also learned about DOM Parser and SOAP. Students learned about ASP.Net web programming with basic & rich controls

CO2. likecalendar, AdRotator etc by using validation controls. They also learned how to

configure IIS Web Server and run the web application on browser.

Students learned about accessing data with ADO.NET relational database & SQL.

CO3. They also learned about data-bound controls like Data Grid, Data List & Repeatersby using examples.

CO4. Students will able to understand Accessing Data with ADO. Working with

Data –Bound Controls, Customizing DataSet and Combining Data Tables, Difference between ADO .NET and XML, Adding Controls, Data binding, Database Connectivity.

COURSE NAME : SOFTWARE TESTING[PAPER- IV]

COURSE OUTCOMES:

- CO1 : Students will learn about testing as a Process how it can be classified into Verification and Validation testing Process.
- CO2 : Students will be able Test Case Design using Black box and white box testing .
- CO3 : Students will be able learn all the levels in testing Unit Testing , Integration testing ,System Testing and Acceptance testing. They learned how to Design and Plan each of this test and record there results in Test Logs.
- CO4 : Students will acquire knowledge about the Test Management.

COURSE NAME : PHP-II [PAPER- V]

COURSE OUTCOMES:

- CO1: Handle browsers and validate form data effectively using PHP.
- CO2: Understand classes, objects, and web techniques in PHP, including sessions, cookies, and form processing.
- CO3: Access and manipulate databases using PHP, executing SQL queries and performing database operations.
- CO4: Utilize PHP for various functionalities such as cookies, FTP operations, email handling, sessions, and executing shell command

COURSE NAME : DCN-II [PAPER- VI]

COURSE OUTCOMES:

- CO1 : Students will be able to understand services provided, protocols used, networking devices used and functions of each layer of OSI reference model.
- CO2: Students will be able to learn the transport layer Protocols in detail.
- CO3: Students will be able to learn about the working of session layer and application layer.
- CO4: Digital Network Students will be able to understand the basics of Integrated Services (ISDN), Interfaces of ISDN, Transmission structure, ISDN Protocols and broadband

