



Sai College®

PROGRAMME & COURSE OUTCOMES
OF
MASTERS OF COMPUTER SCIENCE
(M.Sc Computer Science)

VISION

To empower the graduates to be technologically adept, innovative, self-motivated and responsible citizens, possessing human values and contribute significantly towards being a center of excellence in providing globally standard education, through a conducive Teaching and Learning environment, that responds swiftly to the challenges of the ever-changing world.

MISSION

- To achieve academic excellence by imparting in-depth knowledge to the students through effective pedagogies and hands on experience on latest tools and technologies.
- To prepare students to be continuous learners in a connected world and imbibe professional skills and ethical responsibilities in them. To strengthen the Industry-Academia interface that will help the graduates to emerge as leaders in academics or an inspiring revolutionary in entrepreneurship.

COURSE OBJECTIVES

Develop skills to learn new technology. related to algorithms, networking, web design, cloud computing, Artificial Intelligence, Mobile applications. using database technologies. Ability to express the ideas in AI research and programming language related to emerging technology.

M.Sc (Computer Science)-Ist Semester

Paper	Name of Paper
Paper I	Mathematical Foundation of Computer Science
Paper II	Advanced Operating System
Paper III	Data Structures through Algorithm using 'C'
Paper IV	Object Oriented Programming using 'C++'

Paper V**Computer System Architecture****Course Outcomes**

At the end of this course, a student will have developed ability to:

Paper	Name of Paper	Course Outcomes
Paper I	Mathematical Foundation of Computer Science	CO-1: Understand mathematical logic set relation and functions. CO-2: Understand lattice and Boolean algebra. CO-3: Develop the knowledge of groups, fields and rings. CO-4: Develop the knowledge of graph representation. CO-5: Understand about tree representation.
Paper II	Advanced Operating System	CO-1: Understand basic concepts of operating system. CO-2: Gain knowledge about advanced processor management features. CO-3: Gain knowledge about advanced memory management. CO-4: Gain knowledge about advanced device management feature. CO -5: Gain knowledge about advanced file management features.
Paper III	Data Structures through Algorithm using 'C'	CO-1: Understand basic terminology of algorithms. CO-2: Learn about string processing, array, record and pointers. CO-3: Learn about linked list stacks, queues and recursions. CO-4: Learn about tree and graph representations.

		CO 5 Learn various sorting and searching algorithms.
Paper IV	Object Oriented Programming using 'C++'	CO 1 Learn about fundamentals of C++ language. CO 2 Learn using structure functions and array. CO 3 Learn using object classes and inheritance. CO 4 Understand the use of pointers. CO 5 Learn to handle files and streams.
Paper V	Computer System Architecture	CO 1 Learn to represent information in various codes. CO 2 Learn about register transfer language and micro-operations. CO 3 Understand basic computer organisation and design. CO 4 Learn about various computer software and parallel processing. CO 5 Understand basic input output and memory organisation.

M.Sc (Computer Science) - 2ndSemester

Paper	Name of Paper
Paper I	RDBMS (SQL Programming with Oracle)
Paper II	Advanced Computer Networks
Paper III	Programming in Visual Basic
Paper IV	Principles of Compiler Design
Paper V	Numerical Analysis

Course Outcomes

Paper	Name of Paper	Course Outcomes
Paper I	RDBMS (SQL Programming with Oracle)	CO 1 Gain knowledge about overview of database management system. CO 2 Understand the relational model and

		relational algebra. CO 3 Learn about structured query language. CO 4 Gain knowledge about PL/SQL. CO 5 Learn about relational database design.
Paper II	Advanced Computer Networks	CO 1 Gain knowledge about computer networking concept. CO 2 Learn about transmission of digital data. CO 3 Understand the concept of data link layer and routing algorithms. CO 4 Understand the functions of transport layer and ATM. CO 5 Learn the comparative study of networking technology and network security.
PaperIII	Programming in Visual Basic	CO 1 Knowledge about GUI programming and Visual Basic fundamentals. CO 2 Learn about visual basic controls and dialogue boxes. CO 3 Gain knowledge about executing a new project and class modules. CO 4 Learn using COM components and ActiveX controls. CO 5 Learn accessing data using ADO and generating data reports.
Paper IV	Principles of Compiler Design	CO 1 Understand the basic concepts of compiler. CO 2 Understand various scanning and parsing techniques. CO 3 Learn about memory allocation and compilation of expressions. CO 4 Understand the compilation of control structures and input output statements. CO 5 Learn about code optimisation.
Paper V	Numerical Analysis	CO 1 Learn about solutions of polynomial and transcendental algebraic equations. CO 2 Learn about simultaneous equations and matrix. CO 3 Learn about curve fitting from observed data. CO 4 Learn about numerical differentiation and integration.

		CO 5 Learn about solution of differential equations.
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M.Sc (Computer Science)-3rd Semester

Paper	Name of Paper
Paper I	Programming in JAVA
Paper II	Computer Graphics
Paper III	LINUX
Paper IV	Image Processing
Paper V	Object Oriented Analysis & Design

Course Outcomes

Paper	Name of Paper	Course Outcomes
Paper I	Programming in JAVA	CO 1 Gain basic knowledge of JAVA programming language and learn to use integrated development environment. CO 2 Learn to implement user-defined classes and packages and life cycle of a thread. CO 3 Learn to handle exceptions and files. Will also learn about running applet. CO 4 Learn to connect database with programs and manipulate data using JAVA programs. CO 5 Learn internet basics and writing and running servlet.
Paper II	Computer Graphics	CO 1 Understand the basics of computer graphics, its area of applications and devices used in computer graphics. CO 2 Learn to draw basic shapes and fill color using various algorithms CO 3 Learn to represent 2D and 3D transformations using matrices. CO 4 Learn to represent various types of curves.

		CO 5 Understand the Fractal's Geometry and various color models.
Paper III	LINUX	CO 1 Understand the basics of LINUX OS and its File System. CO 2 Learn basic structure and commands of Shell Programming. CO 3 Learn about introduction to shell and process control. CO 4 Learn about interprocess communication. CO 5 Learn about system administration.
Paper IV	Image Processing	CO 1 Understand the fundamentals of digital image processing. CO 2 Learn about image transformation. CO 3 Learn about image enhancement filtering and restoration. CO 4 Learn about image compression and segmentation. CO 5 Learn about representation and reconstruction of an image.
Paper V	Object Oriented Analysis & Design	CO 1 Learn about object oriented analysis and methodology. CO 2 Learn about object-oriented system development process. CO 3 Learn about the various approaches of analysis of a software. CO 4 Learn about design phases of a software. CO 5 Learn about design refinement, database issues and testing of a software.

M.Sc (Computer Science)-4th Semester

Paper	Name of Paper
Paper I	Software Engineering
Paper II	Artificial Intelligence & Expert System
Paper III Elective 1	Data Mining & Data Warehousing
Paper III Elective 2	Advanced Computer Architecture

Course Outcomes

Paper	Name of Paper	Course Outcomes
Paper I	Software Engineering	CO 1 Understand the basic requirements of software analysis and specification. CO 2 Understand software project planning and software designing. CO 3 Learn about software matrix and reliability. CO 4 Learn about software testing and maintenance.
Paper II	Artificial Intelligence & Expert System	CO 1 Understand the overview of artificial intelligence. CO 2 Learn to use heuristic search techniques and control strategies. CO 3 Learn to represent knowledge and AI programming languages. CO 4 Learn about natural language processing and planning. CO 5 Understand about expert systems and learning by computers.
Paper III Elective 1	Data Mining & Data Warehousing	CO 1 Understand the concept of data mining and data warehousing. CO 2 Learn about data processing and system architecture. CO 3 Knowledge about mining association rules in large databases. CO 4 Understand the classification of prediction and cluster analysis. CO 5 Learn to mine complex types of data and trends in data mining.
Paper III Elective 2	Advanced Computer Architecture	CO 1 Learn about Flynn's classification of computers and Parallel computers. CO 2 Learn about various interconnection network architecture. CO 3 Learn about principle of pipelining. CO 4 Learn about advanced processor technology.

		CO 5 Learn about exploring parallelism in program.
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PROGRAMME & COURSE OUTCOMES
OF

BACHELORSIN COMPUTER **APPLICATION**

(BCA)

PROGRAMME OUTCOMES OF BCA COURSE
PO1: Knowledge: Able to understand and apply the fundamental principles, concepts and methods in diverse areas of computer applications, mathematics, statistics etc.
PO2: Reasoning: Understand data-based reasoning through translation of data into abstract concepts using computing technology-based tools and develops real life applications.
PO3: Problem analysis and development of Solutions: Identify, formulate, research and analyse real-time problems. Attain substantiated conclusions to solve the problems using fundamental principles of mathematics, computing sciences by adopting various tools and techniques.
PO4: Software Development: Understand the basic principles of program development by identifying and formulating problems and integrate resources to decisions using the problem-solving approach. Design web applications by understanding the global perspective by connecting people, ideas, media and technology.
PO5: Ethics and social responsibility: Understand and commit to professional ethics and cyber regulations, responsibilities and norms of professional computing practice.
PO 6: Life-long Learning: Recognize the need and have the ability, to engage in continuous reflective learning in the context of technological advancement. Create, select, adapt and apply appropriate techniques, resources, and computing tools to complex computing activities. Able to learn, adapt and apply emerging tools and technologies to meet the demand.
PO 7: Innovation, Employability, and entrepreneurial skills: Identify opportunity; pursue that opportunity to create value and wealth for the betterment of the individual and society at large. Develop the capacity to study and research independently that will help to develop skills for transition to employment in hardware/software companies.
PO 8: Entrepreneurial skills Development: Become an entrepreneur by acquiring technical, communicative, problem solving, intellectual skills.

COURSE OBJECTIVES

The broad objective of BCA degree is **to prepare students for careers in software industry, understanding and skills related to the use of computers and its application.** To impart quality computer education to enhance logical computing and programming skills.

BCA Part-I

Paper	Name of Paper
BCA 101	Discrete Mathematics
BCA 102	Computer Fundamentals
BCA 103	Programming using 'C' Language
BCA 104	PC Software & Multimedia
BCA 105	Web Technology & E-Commerce
BCA 106	Communication Skills
	Bridge Course (Only for Non-Mathematics Students)

Course Outcomes

Paper	Name of Paper	Course Outcomes
BCA 101	Discrete Mathematics	CO 1 Developing formal reasoning and logical notation. CO 2 Perform logical proofs. CO 3 Apply recursive function and solve recurrence relation. CO 4 Understand the concept of Sets and their relations. CO 5 Understand the concept tree and graph representation.
BCA 102	Computer Fundamentals	CO 1 Understand about computers, their evolution, types and concepts.

		CO 2 Understand about various devices used in a computer system. CO 3 Understand about organization and storage devices of computer. CO 4 Understand about software used in computers and their functions. CO 5 Learn about DOS OS and WINDPWS OS.
BCA 103	Programming using 'C' Language	CO 1 Understand the fundamentals of programming. CO 2 Learn about controlling program execution and functions. CO 3 Learn about collecting data using array, string and binding them in one unit. CO 4 Learn to use pointers and manipulate data using their memory address. CO 5 Learn to handle text files using C Language programs.
BCA 104	PC Software & Multimedia	CO 1 Learn to format a document using WORD CO 2 Learn to manipulate data using EXCEL. CO 3 Learn to create presentation using Power Point. CO4 Learn to access and manipulate database using MS Access. CO 5 Learn to handle multimedia like graphics, animation, sound etc.
BCA 105	Web Technology & E-Commerce	CO 1 Understand the basics of Internet and its protocol. CO 2 Create and link web pages using HTML. CO 3 Design web pages using Cascading Styles sheets & JavaScript. CO 4 Create interactive webpages using PHP. CO 5 Understand E-Commerce and its overview.
BCA 106	Communication Skills	CO 1 Learn to form sentences and tenses appropriately. CO 2 Able to make different kind of statements for effective communication. CO 3 Learn to write reports. CO 4 Learn about presentation skills.

		CO 5 Learn about effective official communication techniques.
	Bridge Course (Only for Non-Mathematics Students)	CO 1 Develop basic concepts about mathematics. CO 2 Learn about permutation, combination, and series. CO 3 Learn about basics of trigonometry. CO 4 Understand the representation of straight line, parabola, ellipse, and hyperbola in coordinate system. CO 5 Understand the statistics like mean, mode and median.

BCA Part-II

Paper	Name of Paper
BCA 201	Calculus and Differential Equations
BCA 202	Database Management System
BCA 203	Programming using 'C++'
BCA 204	Computer Networks
BCA 205	Operating System with LINUX
BCA 206	Foundation Course

Course Outcomes

Paper	Name of Paper	Course Outcomes
BCA 201	Calculus and Differential Equations	CO 1 Able to solve limit and continuity. CO 2 Able to solve differentiation of function. CO 3 Able to solve trigonometric integrals and integration by parts and substitution. CO 4 Able to solve problems based on definite integrals. CO 5 Able to solve differential equations.
BCA 202	Database Management System	CO 1 Learn about DBMS and to design a database by using different models.

		CO 2 Learn about logical structure of database. CO 3 Learn about theoretical foundation for relation database and SQL. CO 4 Understand protecting data and making it flexible by eliminating redundancy. CO 5 Gain knowledge of SQL commands for query processing.
BCA 203	Programming using 'C++'	CO 1 Understand basic concepts of OOPs. CO 2 Understand the concept of structures and functions. CO 3 Understand the concept of object and class and constructor and destructors. CO 4 Understand the concept of pointers and inheritance. CO 5 Understand the concept of polymorphism using operator overloading and function overloading.
BCA 204	Computer Networks	CO 1 Learn about computer networking and its basics. CO 2 Knowledge about digital data transmission CO 3 Understand the function of different layers of OSI model CO 4 Understand the function of different layers of TCP/IP model CO 5 Understand the fundamentals of network security and cryptography.
BCA 205	Operating System with LINUX	CO 1 Learn introduction of operating system and its basic concepts. CO 2 Understand the process management and scheduling queues. CO 3 Understand the concept of memory management and page replacement policies. CO 4 Gain knowledge of Unix operating system and its commands. CO 5 Learn about Shell programming.
BCA 206	Foundation Course	CO 1 Learn about Indian art and sculptures. CO 2 Learn about Indian Literatures and epics. CO 3 Learn about Indian freedom struggles and freedom movements.

		CO 4 Learn about Indian Constitution. CO 5 Learn about communication process and report writing.
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BCA Part-III

Paper	Name of Paper
BCA 301	Statistical Analysis
BCA 302	Programming in Python
BCA 303	Dot Net Technology
BCA 304	Software Engineering
BCA 305	Data Structures
BCA 306	Computer System Architecture

Course Outcomes

Paper	Name of Paper	Course Outcomes
BCA 301	Statistical Analysis	CO 1 Understand the concept of permutation and combination. CO 2 Learn to analyse statistical data using measure of central tendency CO 3 Learn to recognise and apply common probability distributions. CO 4 Learn about correlation, regression, and curve fitting. CO 5 Learn about basics of sampling theory.
BCA 302	Programming in Python	CO 1 Learn about basics of python programming language. CO 2 Learn creating python programs and controlling their execution. CO 3 Learn about handling strings and text files using python programs. CO 4 Learn about lists, tuples and dictionary and various data structures.

		CO 5 Learn about creating modules and handling exceptions in python programs.
BCA 303	Dot Net Technology	CO 1 Understand the basics of .NET framework. CO 2 Learn creating programs in VB.Net. CO 3 Learn creating windows forms. CO 4 Learn the basic OOPs concepts. CO 5 Learn database programming and connectivity with database.
BCA 304	Software Engineering	CO 1 Understand the fundamentals of software engineering and its approaches. CO 2 Learn the system designing concepts and standards. CO3 Learn the use of case tools and choice of programming languages. CO 4 Learn the testing of software quality and its assurance. CO 5 Learn the planning of software projects and their monitoring and management.
BCA 305	Data Structures	CO 1 Learn basic concepts and terminology of data structures and algorithms. CO 2 Learn about arrays, records, and pointers in data structures. CO 3 Learn about linked list stacks, queues, and recursions. CO 4 Learn about binary tree and its operations. CO 5 Learn about sorting and searching algorithms.
BCA 306	Computer System Architecture	CO 1 Understand the representation of data in various codes. CO 2 Understand digital logic circuits and their combinational and sequential circuits. CO 3 Understand CPU organisation and microprocessor control signals. CO 4 Understand basic input output organisation and their controllers. CO 5 Understand memory and their accessing techniques.



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PROGRAMME & COURSE OUTCOMES

OF

BACHELORS IN COMPUTER SCIENCE

(B.Sc Computer Science)

PROGRAMME OUTCOMES OF B.Sc Computer Science COURSE

PO1: Understand the design and internal issues of a Computing system, Operating system and Database Management Systems.

PO 2: Reasoning: Understand data-based reasoning through translation of data into abstract concepts using computing technology-based tools and develops real life applications.

PO 3: Apply problem-solving skills and the knowledge of computer science to solve real world problems.

COURSE OBJECTIVES

Able to understand database concepts and database management system software. Analyze and design a real database application. Develop and evaluate a real database application using a database management system. Able to develop applications using PL/SQL & front end tools.

BSc (Computer Science) Part-I

Paper	Name of Paper
Paper 1	Computer Fundamentals
Paper 2	Programming using 'C' Language

Course Outcomes

Paper	Name of Paper	Course Outcomes
Paper 1	Computer Fundamentals	CO 1 Gain general knowledge about computers. CO 2 Understand the CPU and its working. CO 3 Understand memory hierarchy and devices. CO 4 Learn about input and output devices. CO 5 Learn about software and functions.
Paper 2	Programming using 'C' Language	CO 1 Learn about fundamentals of programming. CO 2 Learn about control structures and functions. CO 3 Learn about arrays and strings. CO 4 Learn about pointers. CO 5 Learn about file handling and miscellaneous features of 'C' Language.

BSc (Computer Science) Part-II

Paper	Name of Paper
Paper 1	Computer Hardware
Paper 2	Computer Software

Course Outcomes

Paper	Name of Paper	Course Outcomes
Paper 1	Computer Hardware	CO 1 Learn about classification and organization of computers. CO 2 Learn about Central Processing Unit. CO 3 Learn about memory of computers. CO 4 Learn about I/O devices. CO 5 Learn about system software and programming technique.
Paper 2	Computer Software	CO 1 Learn to create webpages using HTML tags.

		CO 2 Learn to hyperlink webpages. CO 3 Learn concepts of object-oriented programming. CO 4 Learn to create classes and inheritance. CO 5 Learn about polymorphism and file handling.
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BSc (Computer Science) Part-III

Paper	Name of Paper
Paper 1	Computer Hardware
Paper 2	Computer Software

Course Outcomes

Paper	Name of Paper	Course Outcomes
Paper 1	Computer Hardware	CO 1 Understand the introduction & organization of Micro-computers. CO 2 Learn about hardware organisation of Personal Computers. CO 3 Learn about organisation of OS with hardware. CO 4 Learn about handling by OS. CO 5 Learn about various versions of WINDOWS OS.
Paper 2	Computer Software	CO 1 Understand the concept of DBMS and data models. CO 2 Learn about relational database management system. CO 3 Learn about Oracle software. CO 4 Learn about GUI programming in Visual Basic. CO 5 Learn about database programming in Visual Basic.



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PROGRAMME & COURSE OUTCOMES

OF
BACHELOR OF COMMERCE -
COMPUTER APPLICATION
(B.Com CA)

**PROGRAMME OUTCOMES OF B.Com Computer
Application COURSE**

PO1: To make the students efficient in office automation with computers and computer software applications

PO 2: To facilitate the students to join professional courses

PO 3: Helps to acquire entrepreneurship.

COURSE OBJECTIVES

Candidates are required to have the basic knowledge of operating computers which would make handling of systems an easy process. Having an interest in mathematics and science is considered to be a favorable trait that can help students invent and create newer technologies. Considering its applicability in the stream of commerce, computer science entrusts the users with the medium to perform many specified tasks.

B.Com (Computer Application) Part-I

Paper	Name of Paper
Paper 1	Computer Fundamentals
Paper 2	PC S/W & MM

Course Outcomes

Paper	Name of Paper	Course Outcomes
Paper 1	Computer Fundamentals	CO 1 Gain basic knowledge about computers. CO 2 Learn about peripherals of computers. CO 3 Learn about CPU and storage of computers. CO 4 Learn about software and languages. CO 5 Learn about MS-DOS and WINDOWS.
Paper 2	PC S/W & MM	CO 1 Learn to format a document using WORD CO2 Learn to manipulate data using EXCEL. CO 3 Learn to create presentation using Power Point. CO 4 Learn to access and manipulate database using MS Access. CO 5 Learn to handle multimedia like graphics, animation, sound etc.

B.Com (Computer Application) Part-II

Paper	Name of Paper
Paper 1	Internet Application & E-Commerce
Paper 2	Relational Database Management System

Course Outcomes

Paper	Name of Paper	Course Outcomes
Paper 1	Internet Application & E-Commerce	CO 1 Learn about Internet and World Wide Web. CO 2 Learn to design webpages using HTML tags. CO 3 Learn to hyperlink webpages. CO 4 Learn about E-Commerce and business strategy. CO 5 Learn about various business models.
Paper 2	Relational Database Management System	CO 1 Understand the basic concepts of database management system.

		CO 2 Understand relational database management system. CO 3 Learn about relational database design. CO 4 Learn about RDBMS software Oracle. CO 5 Learn about providing security to database and PL/SQL.
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B.Com (Computer Application) Part-III

Paper	Name of Paper
Paper 1	Programming in Visual Basic
Paper 2	System Analysis, Design & MIS

Course Outcomes

Paper	Name of Paper	Course Outcomes
Paper 1	Programming in Visual Basic	CO 1 Gain knowledge about visual basic, it's programs and variables. CO 2 Understanding about controlling program execution. CO 3 Learn about error trapping and debugging. CO 4 Learn about handling sequential and random files. CO 5 Learn ADO data control and report generation.
Paper 2	System Analysis, Design & MIS	CO 1 Understand the concept of system environment. CO 2 Learn to analyse system and tools of structured analysis. CO 3 Learn to design system and implement it. CO 4 Understand about MIS and its structure. CO 5 Learn about various information system concept.



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PROGRAMME & COURSE OUTCOMES
OF
POST GRADUATE DIPLOMA IN
COMPUTER APPLICATION

(PGDCA)

PROGRAMME OUTCOMES OF PGDCA COURSE

PO1: Make use of internet for searching and downloading information on web, sending or receiving mails.
PO 2: Prepare presentation and perform computation on excel sheet.
PO 3: Handle Windows and Linux operating system for general purpose applications and networking.
PO 4: Develop general purpose application based on C/VB and HTML based languages.
PO5: Perform various office activities on computer system such as installation of software, handling of printer and scanner, internet connection along with troubleshooting of system.
PO6: Students will attain an ability to analyse the local and global impact of computing on individuals, organizations, and society.
PO7: Students will attain an ability to use current techniques, skills, and tools necessary for computing practice.
PO8: Demonstrate employability skills and a commitment to professionalism.

COURSE OBJECTIVES

Demonstrate employability skills and a commitment to professionalism. Operate a variety of advanced spreadsheet, operating system and word processing functions. Solve a range of problems using office productivity applications, and adapt quickly to new software releases.

PGDCA – 1st Semester

Paper	Name of Paper
PGDCA 101	Introduction to Software Organisation
PGDCA 102	Programming in 'C' Language

PGDCA 103

Office Automation & Tally

Course Outcomes

Paper	Name of Paper	Course Outcomes
PGDCA 101	Introduction to Software Organisation	CO 1 Understand about computers and their evolution with time. CO 2 Learn about basic organization of a computer system. CO 3 Understand the concept of computer software and their requirements. CO 4 Learn about programming concepts. CO 5 Understand about networking and connection of computers across the world.
PGDCA 102	Programming in 'C' Language	CO 1 Learn basics of programming in 'C' Language. CO 2 Learn to use control structures for repetitive execution of commands. CO 3 Learn to use functions and arrays for collection of data and modularization of programs. CO 4 Learn to use pointers for easily accessing data. CO 5 Learn to use structure and union to bind data in a single unit.
PGDCA 103	Office Automation & Tally	CO 1 Understanding about WINDOWS OS and desktop. CO2 Learn to format a document using WORD and manipulate data using EXCEL. CO 3 Learn to create presentation using Power Point. CO 4 Learn to access and manipulate database using MS Access. CO 5 Learn to manage accounts using Tally Software.

Paper	Name of Paper
PGDCA 106	Programming in Visual Basic
PGDCA 107	Database Management System
PGDCA 108	Essential of E-Commerce

Course Outcomes

Paper	Name of Paper	Course Outcomes
PGDCA 106	Programming in Visual Basic	CO 1 Understand about event driven programming and will create program using objects and controls. CO 2 Learn to use control instructions and program execution. CO 3 Learn using various controls and error debugging. CO 4 Learn to handle files and manipulate data using SQL CO 5 Learn to generate report of a project.
PGDCA 107	Database Management System	CO 1 Understanding about data, information, and its importance. CO 2 Learn to generalize and specialized data using ER diagrams. CO 3 Learn about relational model of data. CO 4 Understand about pitfalls in database design and their solutions. CO 5 Learn to manipulate data using Structured Query Language and provide security to data.
PGDCA 108	Essential of E-Commerce	CO 1 Understand E-Commerce, its emergence and overview. CO 2 Learn about securing E-Commerce business and its various models. CO 3 Learn the basic concepts of designing a website using HTML basic tags. CO 4 Learn to link different webpages and inserting images and details to webpages. CO 5 Understanding about search engines and downloading, uploading, and hosting websites.



Sai College®

PROGRAMME & COURSE OUTCOMES

OF

DIPLOMA IN COMPUTER

APPLICATION

(DCA)

PROGRAMME OUTCOMES OF DCA COURSE

PO1: Make use of internet for searching and downloading information on web, sending or receiving mails.
PO 2: Prepare presentation and perform computation on excel sheet.
PO 3: Handle Windows and Linux operating system for general purpose applications and networking.
PO4: Students will attain an ability to analyse the local and global impact of computing on individuals, organizations, and society.
PO5: Students will attain an ability to use current techniques, skills, and tools necessary for computing practice.

COURSE OBJECTIVES

The Diploma in Computer Applications (DCA) is a one-year diploma course in computer applications that includes **studying numerous computer applications such as MS Office, Internet Applications, Operating System, Database Management System (DBMS), and HTML.**

DCA – 1st Semester

Paper	Name of Paper
DCA 101	Essentials of Information Technology and OS
DCA 102	Essentials of Office Automation
DCA 103	Programming in 'C' Language

Course Outcomes

Paper	Name of Paper	Course Outcomes
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DCA 101	Essentials of Information Technology and OS	CO 1 Understand about computers and their types. CO 2 Learn about basic organization of a computer system. CO 3 Understand the concept of operating system and its functions. CO 4 Gain knowledge about WINDOWS OS. CO 5 Gain knowledge about LINUX OS.
DCA 102	Essentials of Office Automation	CO 1 Understanding about WINDOWS OS and desktop. CO2 Learn to format a document using WORD and manipulate data using EXCEL. CO 3 Learn to create presentation using Power Point. CO 4 Learn to access and manipulate database using MS Access. CO 5 Learn to manage accounts using Tally Software.
DCA 103	Programming in 'C' Language	CO 1 Learn basics of programming in 'C' Language. CO 2 Learn about various operators and expressions in 'C' Language. CO 3 Learn to use control structures for repetitive execution of commands. CO 4 Learn to use functions and arrays for collection of data and modularization of programs. CO 5 Learn to use pointers for easily accessing data.

DCA – 2nd Semester

Paper	Name of Paper
DCA 105	GUI - Programming in Visual Basic
DCA 106	E-Commerce
DCA 107	HTML & Internet Applications

Course Outcomes

Paper	Name of Paper	Course Outcomes
DCA 105	GUI - Programming in Visual Basic	CO 1 Understand the basic concepts of Visual Basic and event driven programming. CO 2 Learn about control structures and arrays. CO 3 Learn to program using procedures and functions. CO 4 Learn to use advanced controls and graphic controls. CO 5 Learn to access and manipulate data using ADO controls.
DCA 106	E-Commerce	CO 1 Understand about E-Commerce and its environment. CO 2 Understand about Electronic Data Interchange and its overview. CO 3 Understand the need and ways of protection of data. CO 4 Learn about E-Commerce payment systems. CO 5 Learn about various Business Models.
DCA 107	HTML & Internet Applications	CO 1 Learn about designing webpages using basic HTML tags. CO 2 Learn to structure a document using HTML tags. CO 3 Learn to link webpages using linking tags. CO 4 Learn to create websites and uploading, downloading, and hosting websites. CO 5 Understand the internet, its applications and search engines.