ST. XAVIER'S COLLEGE JAIPUR

Nevta - Mahapura Road, Jaipur - 302029, Rajasthan, India

Affiliated to the University of Rajasthan

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COURSE OUTCOMES

Bachelor of Computer Applications

(B.C.A)

(Session 2021-2024)

COURSE OUTCOMES (COs)	
BCA Part-I	
101 (Theory): Elementary Physics	
CO 1.	Understand the basic terminology/definitions of electrical and electronics
CO 2.	Apply the knowledge of theorems/laws to analyze the simple circuits
CO 3.	Use the principles of electromagnetic induction in electrical applications
CO 4.	Ability to understand logic and gates and minimize the Boolean functions using Karnaugh maps and “don’t care” condition
CO 5.	Ability to understand, analyze and design various combinational and sequential circuits
102 (Theory): Basic Mathematics	
CO 1.	Identify matrix operations
CO 2.	Understand the meaning of limit, continuity, and differentiation
CO 3.	Evaluate a definite integral using the Fundamental Theorem of Calculus
CO 4.	Identify a general method for constructing solutions to inhomogeneous linear constant-coefficient Second-order equations
CO 5.	Demonstrate Scalar multiplication, magnitude, Vector multiplication and Simple application of Vectors, the slope of a straight line, center, radius, and the equation of a circle

103 (Theory): General English	
CO 1.	To understand and apply knowledge of human communication and language
CO 2.	Ability to find, use, and evaluate primary academic writing associated with the discipline of communication
CO 3.	Communication that facilitates their ability to work collaboratively like managing conflict, understanding small group processes, active listening, appropriate self-disclosure, etc
CO 4.	Understanding the types of interviews and making oneself competent
CO 5.	Create a resume, a cover letter, and a profile on professional social media sites
CO 6.	Create various types of business reports
CO 7.	Create meaningful visual media
CO 8.	Discuss different processes and considerations involved in writing in business
104 (Theory): Principles of Programming Language through C	
CO 1.	Understand the basics of programming language
CO 2.	Understand the basics of algorithms and flowcharts
CO 3.	Write, compile and debug programs in C language
CO 4.	Understand, explain, and use different data types and operators to write programs
CO 5.	Formulate, evaluate, and analyze the problems by applying programming concepts using decision control statements and loop control statements
CO 6.	Formulate the problem by apply the programming concepts using array, structure, pointer and functions

105 (Theory): Computer Organization	
CO 1.	Identify functional units and illustrate register transfer operations
CO 2.	Explain the internal organization of the computer and its instructions
CO 3.	Make use of fixed and floating-point algorithms and analyze micro program instructions
CO 4.	Summarize the memory organization and pipelining concepts
106 (Theory): Office Management Tools	
CO 1.	Understand the basic features of Microsoft Office, Windows basics, and file management
CO 2.	Develops familiarity with Word, Excel, Access, PowerPoint, email, and Internet basics
CO 3.	Recognize when to use each of the Microsoft Office programs to create professional and academic documents
CO 4.	Use Microsoft Office programs to create personal, academic, and business documents following current professional and/or industry standards

107: Technical Writing and Communications Skills (PRACTICAL)	
CO 1.	Students will be able to know the importance and use of the English Language
CO 2.	They will be able to introduce themselves professionally with confidence
CO 3.	They will be acquainted with prescribed grammatical topics and will learn English
CO 4.	They will be able to communicate effectively and confidently in the written form
108: C Programming Lab (PRACTICAL)	
CO 1.	Identify different programming approaches in procedural programming
CO 2.	Analyze and critically evaluate various programming approaches
CO 3.	Implementation of different applications or projects
CO 4.	Select and implement different programming approach concepts in project or application development
CO 5.	Demonstrate awareness of the programming paradigm in terms of understanding the concept of application development

109: Office Management Tools (PRACTICAL)	
CO 1.	Introduction operating system, types, explaining various commands of DOS
CO 2.	Introduction to MS- Word, analysis of the various menus of MS- Word, knowledge of converting word documents into various formats, Explaining Mail Merge
CO 3.	Introduction to MS- Excel, working on formulas, Introduction to Cell Reference and different types., working on charts, graphs, macros
CO 4.	Creating and viewing PowerPoint presentations, working on multimedia and special effects
CO 5.	Working on MS- Access, creating and editing database, forms, queries, reports, tables
CO 6.	Sorting and indexing database
110 :Typing Skills Lab (Hindi and English Typing)(PRACTICAL)	
CO 1.	Making the Student Familiar with Hindi Characters
CO 2.	Understanding the functions of keys on keyboards
CO 3.	Understand the importance of touch keyboarding
CO 4.	Learn correct keyboarding techniques
CO 5.	Correctly format business and academic documents

BCA Part-II	
201(Theory): Business Accountancy	
CO 1.	Understand basic concepts and terminologies of accounting
CO 2.	Understand the process of recording and classifying business transactions and events
CO 3.	Recognize commonly used financial statements, their components and how information from business transactions flows into these statements
CO 4.	Understand the financial statements, viz., Profit and Loss Account, Balance Sheet, and cash flow statement of a sole proprietor
CO 5.	Demonstrate knowledge of the preparation of Financial Statements and or financial schedules in accordance with Generally Accepted Accounting Principles
202(Theory): Discrete Mathematics	
CO 1.	Ability to apply mathematical logic to solve problems
CO 2.	Understand sets, relations, functions and discrete structures
CO 3.	Ability to use logical notations to define and reason about fundamental mathematical concepts such as sets of relations and functions
CO 4.	Ability to formulate problems and solve recurrence relations
CO 5.	Ability to model and solve real-world problems using graphs and trees

203(Theory): Operating System	
CO 1.	Describe the basics of the operating systems, and mechanisms of OS to handle processes, threads, and their communication
CO 2.	Analyze the memory management and its allocation policies
CO 3.	Illustrate different conditions for deadlock and their possible solutions
CO 4.	Discuss the storage management policies with respect to different storage management technologies
CO 5.	Evaluate the concept of the operating system with respect to UNIX, Linux, Time, and mobile OS
204(Theory): Database Management System	
CO 1.	To investigate what databases are, different types of databases, and why they are valuable assets for decision making
CO 2.	Develop normalization and ER modelling that are used concurrently to produce a good database design
CO 3.	Recognize the relationships among entities and the attributes of those entities, and in designing an entity relationship diagram to capture those relationships
CO 4.	Develop a set of queries to handle a specified set of typical user inquiries for information extraction from the database

205(Theory): Web Application Development	
CO 1.	Understand, analyze, and apply the role of languages like HTML, CSS, and JavaScript in web development
CO 2.	Analyze and explore a web page and identify its elements and attributes
CO 3.	Design static web pages using HTML and CSS
CO 4.	Create dynamic web pages using JavaScript
206(A) (Theory): Object Oriented Programming (C++)	
CO 1.	Read and understand object-oriented software code of medium-to-high complexity
CO 2.	Use standard and different types of Object-oriented libraries when required for implementation
CO 3.	Understand the basic principles of creating Object oriented applications or programs
CO 4.	Understand the fundamental concepts of computer science: structure of the computational process, algorithms, and complexity of computation

206(B) (Theory): VB.Net	
CO 1.	Understand .NET Framework programming
CO 2.	Describe the basic structure of a Visual Basic.NET project and use the main features of the integrated development environment (IDE)
CO 3.	Acquire deep knowledge of data types, operators and control statements in VB.NET
CO 4.	Implement the concept of arrays, procedures and structures using various VB.NET controls
CO 5.	Ability to create applications using Microsoft Windows Forms.
CO 6.	Ability to handle exceptions and effectively work with
CO 7.	Database connectivity using ADO.NET
207: Database Management System Lab (PRACTICAL)	
CO 1.	Understand, the underlying concepts of database technologies, design and implement a database schema for a given problem domain, and normalisation techniques
CO 2.	Populate and query a database using SQL DML/DDL commands, enforce integrity constraints on a database
CO 3.	Concept of transaction and concurrency, understand database concepts and structures
CO 4.	Understand the objectives of data and information management, and understand the data modelling and database development process
CO 5.	Construct and normalise conceptual data models. Implement a relational database into a database management system

208(A) :Object Oriented Programming (C++) (PRACTICAL)	
CO 1.	This lab work provides the object-oriented programming approach in connection with the C++ language
CO 2.	Understand the difference between the top-down and bottom-up approach
CO 3.	Apply the concepts of object-oriented programming in practical application
CO 4.	Apply virtual and pure virtual functions & complex programming situations
CO 5.	Writing programs using the concept of polymorphism
CO 6.	Applying the Programming assignments based on Encapsulation, and dynamic binding
CO 7.	Use of exception handling should be used in real-time programming using C++
CO 8.	Illustrate the process of data file manipulations using C++
208(B) VB.Net (PRACTICAL)	
CO 1.	Working on .NET Framework
CO 2.	Writing the structure of a Visual Basic.NET project and using the main features of the integrated development environment (IDE)
CO 3.	Use of data types, operators, and control statements in VB.NET
CO 4.	Practically implement the concept of arrays, procedures and structures using various VB.NET controls
CO 5.	Creating applications using Microsoft Windows Forms
CO 6.	Handling exceptions through self-written codes
CO 7.	Database connectivity using ADO.NET

209 :Web Design and Multimedia (PRACTICAL)	
CO 1.	Able to recognize the key elements of www
CO 2.	Able to recognize the components available for the security and privacy of the systems and network
CO 3.	Able to create HTML web pages and execute them, different HTML tags
CO 4.	Able to implement different styling ways and related attributes on webpages, filters, frames and layers on webpages
CO 5.	Able to create web pages with JavaScript
CO 6.	Able to use jQuery in web pages. Able to create pages with AJAX. publish websites
210: Multimedia (PRACTICAL)	
CO 1.	Understand the basic concepts and terminology of the Web and its services
CO 2.	Analyze a web page and identify its elements and attributes
CO 3.	Create web pages using HTML, DHTML, and Cascading Style Sheets
CO 4.	Build dynamic web pages using JavaScript (Client-side programming)
CO 5.	Develop proficiency in using basic and advanced tools and features of Photoshop to manipulate images and graphics
CO 6.	Develop skills in CorelDraw for designing custom web graphics for business and personal websites

BCA Part-III	
301(Theory): Data Structure and Algorithm	
CO 1.	Students will be able to use linear and non-linear data structures like stacks, queues, linked lists etc
CO 2.	Define basic static and dynamic data structures and relevant standard algorithms for them: stack, queue, dynamically linked lists, trees, graphs, heap, priority queue, hash tables, sorting algorithms, and min-max algorithm
CO 3.	Students will be able to choose appropriate data structures as applied to specified problem definitions
CO 4.	Students will be able to handle operations like searching, insertion, deletion, and traversing mechanism
302(Theory): System Design Concepts	
CO 1.	Assess analysis and design tools and techniques
CO 2.	Examine fundamental software testing techniques and strategies
CO 3.	Understand principles of system implementation and maintenance
CO 4.	Apply various estimation models to determine the cost of software projects and illustrate risks in the software projects
CO 5.	Evaluate the role of information systems in today's competitive business environment

303(Theory): Networking Technologies	
CO 1.	Understand the concept of Signals, OSI & TCP/IP reference models and discuss the functionalities of each layer in these models
CO 2.	Discuss and analyze flow control and error control mechanisms and apply them using standard data link layer protocols
CO 3.	Design subnets and calculate the IP addresses to fulfil the network requirements of an organization
CO 4.	Analyze and apply various routing algorithms to find shortest paths for packet delivery
CO 5.	Explain the details of Transport Layer Protocols (UDP, TCP) and suggest appropriate protocols for reliable/ unreliable communication
CO 6.	Analyze the features and operations of various application layer protocols such as HTTP, DNS and SMTP
304 (Theory): JAVA	
CO 1.	Understand the basic principles of OOP and Java Programming.
CO 2.	Analyze various techniques and methods used in Java
CO 3.	Implement the various concepts of Java to solve problems
CO 4.	Develop Web and Desktop Applications using Java

305(Theory): E-commerce	
CO 1.	Demonstrate an understanding of the foundations and importance of E-commerce
CO 2.	Analyze the impact of E-commerce on business models and strategy
CO 3.	Describe the infrastructure for E-commerce
CO 4.	Describe the key features of the Internet, Intranets and Extranets and explain how they relate to each other
CO 5.	Discuss E-Commerce Security
CO 6.	Assess electronic payment systems
306(A) (Theory): PHP	
CO 1.	To implement PHP script using Decisions and Loops
CO 2.	To develop PHP applications using Strings, Arrays and Functions
CO 3.	To design object-oriented programming (OOP) principles for PHP and use HTML form elements that work with any server-side language
CO 4.	To display and insert data using PHP and MySQL

306(B) (Theory): LINUX	
CO 1.	Understand basics of Linux Operating System and File System, set of commands and utilities in Linux systems
CO 2.	Write shell programming and investigate & manage processes. control structure, loops, cases and functions in shell programming and apply them to create shell scripts
CO 3.	Compare different editors (vi, etc.) and use them to create a shell script for a given problem
CO 4.	Familiarity with pipes and redirection, LINUX environment, traps, signals, filter parameters, filter options, and Regular Expressions
CO 5.	Explain the role of system administration and network services in Linux
307 :Network Technologies Lab (PRACTICAL)	
CO 1.	Understand the fundamental underlying principles of computer networking
CO 2.	Understand the details and functionality of layered network architecture
CO 3.	Apply mathematical foundations to solve computational problems in computer networking
CO 4.	Analyze the performance of various communication protocols.
CO 5.	Compare routing algorithms and their functions
CO 6.	Practice packet /file transmission between nodes.

308: Java Lab (PRACTICAL)	
CO 1.	Understand the basic concepts of scripting and the contributions of scripting language
CO 2.	Explore Python data structures like Lists, Tuples, Sets and dictionaries
CO 3.	Create practical and contemporary applications using Functions, and Regular Expressions
CO 4.	Ability to learn how to read and write files in JAVA
309(A): VB.Net (PRACTICAL)	
CO 1.	Introduction to PHP
CO 2.	Programs on server-side scripting and client-side- scripting. datatypes, syntax
CO 3.	Programs on decision-making statements, iterations arrays and their types
CO 4.	Programs on the concept of string functions performed on strings
CO 5.	Programs on functions, their types, arguments
CO 6.	Programs on form handling, exception, try to catch, file handling operations
CO 7.	Programs on database handling
CO 8.	Introduction to PHP
CO 9.	Programs on server-side scripting and client-side- scripting. datatypes, syntax

309(B): LINUX (PRACTICAL)	
CO 1.	Able to recognize the booting and interface of the Linux operating system
CO 2.	Able to execute and test commands related to file and data handling, arithmetic operations, redirection and piping
CO 3.	Execute user and administration-specific operations. Execute shutdown and user management-specific commands
CO 4.	Able to install Linux and handle dual operating systems in one computer. file permissions and directories
CO 5.	Able to open and work in different modes of vi Editor, able to use the commands of vi editor
CO 6.	Able to create and execute shell scripts
310: Project	
CO 1.	Introduction of Subject
CO 2.	Seeing Working Model and Identifying Errors if any
CO 3.	Learn critical thinking skills and inquiring skills through application-oriented project development in CS & IT in a teamwork environment
CO 4.	Learn literature survey skills. Refine communication skills and public speaking skills through written and oral presentations
CO 5.	Learn problem-solving skills. Learn proposal development skills to initiate an application-oriented project in the areas of CS & IT