Rayat Shikshan Sanstha's

Savitribai Phule Mahila Mahavidyalaya, Satara

Programme Outcomes (POs)

Bachelor of Camputer Application

(B.C.A.)

After completing B.C.A. degree programme, the students will be able to:

PO1	Analyse computer Programmes.
PO2	Identify various computer Languages.
PO3	Apply various software, web designing and Networking.
PO4	Illustrate basic hardware systems and their application.
PO5	Design and develop Software.
PO6	Have communication and negotiation skills.
PO7	Conduct investigation of complex problems.
PO8	Acquire employability and face the challenges of IT.
PO9	Turn responsible citizens.

SAVITRIBAI PHULE MAHILA MAHAVIDYALAYA SATARA

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Programme Specific Outcome (PSOs)

BCA Graduate students will be:

PSO1	Develop creative and logical effective computer solutions.
PSO2	Design programming languages for development of website, software, application and system.
PSO3	Apply the knowledge of advanced technology used in IT sector.
PSO4	Acquire leadership skills and team work qualities.
PSO5	Have Successful Career in the field of technology and computer application.
PSO6	Design database application for storing the data.

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Bachelor of Computer Application

Department of BCA

Program Educational Outcomes:

After completion of this program, the graduates /students would:

PEO I	Technical Expertise	Implement fundamental domain knowledge of core courses for developing effective computing solutions by incorporating creativity and logical reasoning.
PEO II	Successful Career	Deliver professional services with updated technologies in Computer Application based career.
PEO III	Interdisciplinary and Life Long Learning	Develop leadership skills and incorporate ethics, team work with effective communication & time management in the profession Undergo higher studies, certifications and technology research as per market needs.

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Bachelor of Computer Application

Department of BCA

Course Outcomes (COs)

After studying these courses students will be able to:

BCA-I-Sem-I(NEP 2.0) MATHEMATICS FOUNDATION TO COMPUTER SCIENCE - I CC101	
CO1	Provide a basic understanding of fundamental mathematical concepts such as sets, functions, matrix algebra, and discrete mathematics.
CO2	This course enables the students to use mathematical models and techniques to analyze and understand problems in computer science.
CO3	This course demonstrates how the mathematical principles give succinct abstraction of computer science problems and help them to efficiently analyze.
BCA-I-Sem-I(NEP 2.0) PROBLEM SOLVING TECHNIQUES SEC101	
CO1	Understand basic terminology of computers, problem solving, programming Languages and their evolution.
CO2	Create specification from problem requirements by asking questions to disambiguate the requirement statement.
CO3	Design the solution from specification of a problem and write pseudo code of the algorithm using basic building blocks or structured programming constructs (Sequence, Selection and Repetition statement).
CO4	Translate an algorithm into a C computer program.
CO5	Testing and analyzing programs using debugging tools.
BCA-I-Sem-I(NEP 2.0) COMPUTER ARCHITECTURE CC102	
CO1	To Understand the basics of Digital Electronics and Binary Number System
CO2	To Learn the implementation of Combinational Circuit.
CO3	To Learn the implementation of Sequential Circuit.
CO4	To Understand the Organization of basic computers and concept of memory organization.
BCA-I-Sem-I(NEP2.0) GENERAL ENGLISH AEC102	
CO1	Explain concept of Word Formation in English Language.
CO2	Illustrate use of phrases and clauses in sentences in English Language.
CO3	Identify common errors in English Writing.
CO4	Develop reading and listening, writing and speaking skills.

BCA-I-Sem-I(NEP 2.0) INDIAN VISION FOR HUMAN SOCIETY MDE101	
CO1	Explain the concept of "Vasudhaiva Kutumbkam" and its realization process as an base for the development of vision for a human society.
CO2	Identify the universality in humans and its coexistence in existence.
CO3	Demonstrate the sense of responsibility, duties, and participation of individual for establishment of fearless society.
CO4	Explain the apparently rational, verifiable and universal solution from ancient Indian knowledge system for the holistic development of physical, mental and spiritual wellbeing of one and all, at the level of individual, society, nation and ultimately the whole world.
BCA-I-Sem-I(NEP 2.0) ENVIRONMENTAL SCIENCE AND SUSTAINABILITY VAC101	
CO1	Explore the basic environmental concepts and issues relevant to the business and management field.
CO2	Recognize the interdependence between environmental processes and socioeconomic dynamics.
CO3	Determine the role of business decisions, policies, and actions in minimizing environmental degradation.
CO4	Identify possible solutions to curb environmental problems caused by managerial actions.
CO5	Develop skills to address immediate environmental concerns through changes in business operations, policies, and decisions.
BCA-I-Sem-I (NEP 2.0) GERMAN AEC103-IV	
CO1	Recognize basic grammar used in German Language
CO2	Demonstrate familiar everyday expressions and very basic phrases aimed at the satisfaction of needs of a concrete type.
CO3	Execute himself /herself and can ask and answer questions about personal details such as where he/she lives, people he/she knows and things he/she has.
CO4	Debate and interact in a simple way provided the other person talks slowly and clearly and is prepared to help.
CO5	Assess development in German language vocabulary by interacting with others
CO6	Construct presentation of how to use and scope of German Language.
BCA-I-Sem-II(NEP 2.0) MATHEMATICS FOUNDATIONS TO COMPUTER SCIENCE – II CC103	
CO1	This course helps the students to understand correct lines of arguments and proofs.
CO2	This course introduces mathematical techniques that are foundations for understanding advanced computational methods, including

	numerical methods and optimization.
CO3	This course helps the students to understand various problem-solving strategies and methods to tackle both theoretical and practical challenges in computer science.
BCA-I-Sem-II(NEP 2.0) DATA STRUCTURES CC104	
CO1	Understand the fundamental concepts of Data Structures and their applications.
CO2	Develop problem-solving skills using Data Structures.
CO3	Implement Data Structures using C programming language
BCA-I-Sem-II(NEP 2.0) OPERATING SYSTEMS CC105	
CO1	Explain the fundamentals of the operating system.
CO2	Comprehend multithreaded programming, CPU scheduling, process management, process synchronization, memory, deadlocks, and storage management.
CO3	Compare the performance of CPU scheduling algorithms
CO4	Identify the features of I/O and File handling methods.
BCA-I-Sem-II(NEP 2.0) OBJECT ORIENTED PROGRAMMING USING JAVA SEC102	
CO1	To introduce the object oriented programming system concepts
CO2	To introduce syntax and semantics of Java programming language
CO3	To develop modular programs using Java
CO4	To setup JDK environment to create, debug and run Java programs
BCA-I-Sem-II(NEP 2.0) WEB TECHNOLOGIES SEC103	
CO1	To understand the concepts and architecture of the World Wide Web, Markup languages along with Cascading Style Sheets.
CO2	To understand the concepts of event handling and data validation mechanisms.
CO3	To understand the concepts of embedded dynamic scripting on client side programming. CO4: To develop modern interactive web applications
BCA-I-Sem-II (NEP 2.0) INDIAN CONSTITUTION VAC201	
CO1	Explain concept of the Indian Constitution, particularly from the perspective of economic governance and business
CO2	Employ a nuanced analytical framework about ongoing constitutional debates and battles which affect the domain of business.
CO3	Develop a sense of how questions of economic growth have to be balanced with other constitutional commitments, including social and economic justice.

CO4	Illustrate the process of data file manipulations using C++
❖ **BCA-II, SEM-III**	
▪ **Web Technology**	
CO1	Analyse basics of website and web development life cycle**.**
CO2	Design website using HTML and CSS.
CO3	Create web pages using XHTML and Cascading Style Sheets.
CO4	Design the script for website development.
CO5	Analyse the importance and working of web technology.
CO6	Apply HTML5.
▪ **Computer Network and Internet**	
CO1	Define the concept of computer network.
CO2	Explain the computer networks.
CO3	Identify different components required to build different networks.
CO4	Analyse the functions of network layers and different protocols.
CO5	Discuss the important features of the Internet and Web**.**
CO6	Illustrate essential computer network protocols.
▪ **Data Structure using C**	
CO1	Describe appropriate data structure for the required problems using a programming language such as C.
CO2	Identify various searching & sorting techniques.
CO3	Explain the importance of data structures in context of writing efficient programs.
CO4	Describe various data structures viz. Stacks, Queues.
CO5	Explain the concept of object thinking within the framework of functional model.
CO6	Analyse Linked Lists and Trees.

▪ **Elements of Statistics**	
CO1	Explain various term used in Statistics.
CO2	Describe the Measures of Central Tendency.
CO3	Describe the Measures of Dispersion.
CO4	Analyse Bivariate data (Correlation and Regression).
CO5	Elaborate Sampling Techniques and Time Series Analysis.
CO6	Explain Statistical representations of relevant structures and relationships.
▪ **Human Resource Management and Materials Management**	
CO1	Describe Human Resource Planning Process.
CO2	Elaborate Performance Appraisal, Training and Development, Wage and salary Administration.
CO3	Explain functions of material management.
CO4	Define HRM activities.
CO5	Analyse employee satisfaction, motivation, retention, and presence.
CO6	Demonstrate 5 R in purchasing and Inventory control techniques.
▪ **Lab Course-V Based on CC301**	
CO1	Describe Web Design Concept.
CO2	Design Web Pages using CSS, HTML & Java Script.
▪ **Lab Course VI based on CC303 and AEC304**	
CO1	Apply various data structures viz. Stacks, Queues, Linked Lists and Trees.
CO2	Apply Ms Excel features for Data Manipulation and Analysis.
❖ **SEM-IV**	
▪ **RDBMS**	
CO1	Describe the fundamental elements of Relational Database Management Systems.
CO2	Explain various commands in data languages with example.

CO3	Define various sub queries & joins.
CO4	Describe the basic concepts and the applications of database systems.
CO5	Explain the relational database design principles.
CO6	Apply the control statements and stored procedures.
▪ **Software Engineering**	
CO1	Design life cycle models, requirement elicitation techniques, understand the concept of analysis and design of software.
CO2	Develop SRS document.
CO3	Develop more general skills, such as: verbal communication, to work as part of a team.
CO4	Design tools for system development.
CO5	Explain requirement analysis of software to be developed.
CO6	Apply software engineering concepts in software development to develop quality software.
▪ **DOT NET Technology**	
CO1	Explain features of C# DOT NET.
CO2	Explain various server controls for website development.
CO3	Implement various server NET *Framework* and *ASP.NET* page structure.
CO4	Apply validation and state management for interactive website development.
CO5	Design and develop dynamic web application using ADO.
CO6	Design Net Entrepreneurship Development.
CO7	Define characteristics, function and types of entrepreneurs and know the role of Entrepreneurship in Economic Development.
CO8	Identify Business Opportunities and prepare business plan.
CO9	Describe project finance agencies.

CO10	Explain New Opportunities and Challenges in digital entrepreneurship**.**
▪ **PHP**	
CO1	Define environment of PHP programming Language.
CO2	Define a static website.
CO3	Explain the connecting string to any modern database.
CO4	Develop web applications using PHP.
CO5	Explain the making of PHP web servers.
CO6	Illustrate a MySQL database to create database-driven HTML forms and reports.
▪ **Lab Course VII Based CC 401**	
CO1	Design database for business applications.
CO2	Explain queries, sub queries, join, view and stored procedures on databases.
▪ **Lab course-VIII Based on CC403**	
CO1	Design console applications using C#.
CO2	Design web application using ASP.Net
▪ **Mini Project**	
CO1	Design fundamental domain knowledge of core courses for developing simple business applications.
CO2	Utilize the software development techniques, skills and modern tools.
CO3	Explain the difference between cost accounting and financial accounting and management accounting.
CO4	Apply different financial statement analysis tools for management decision making.
CO5	Compare the cost for make or buy product, shut down or continue business or alternative decisions by using cost volume profit analysis technique.

CO6	Draft budget to control the cost of specific to overall objects of a business organizations.
❖ **BCA-III, SEM-V**	
▪ **E-Commerce**	
CO1	Explain the functioning of E-Commerce.
CO2	Differentiate the ways of E commerce.
CO3	Illustrate customer service.
CO4	Apply the control measures while operating with E.
CO5	Explain the solution used for controlling the E.
CO6	Describe Electronic commerce focuses on the use of information.
▪ **Computer Network**	
CO1	Define Data Communication concept.
CO2	Apply Reference Models and transmission media.
CO3	Recognize computer networks.
CO4	Recognize essential computer network protocols.
CO5	Explain different layers like Network layer and Transport layer.
CO6	Illustrate networking protocols.
▪ **RDBMS with Oracle**	
CO1	Define the concept of relational Database Management System.
CO2	Write and Execute SQL Queries.
CO3	Explain the basic concepts and the applications of database systems.
CO4	Define the relational database design principles.
CO5	Write and Execute Join & Sub queries.
CO6	Explain Procedure of Block of statement.
▪ **Visual Programming**	
CO1	Define Architecture, Features of NET.

CO2	Explain the basic concepts of C#.
CO3	Recognize and arrange control structures.
CO4	Design a complete program using visual programming concepts.
CO5	Design web programming.
CO6	Develop ADO.Net &its Architecture.
▪ **Lab Course based on 504 and 505**	
CO1	Explain Architecture and Features of .NET
CO2	Develop web programming.
CO3	Explain queries by using Oracle functions & Clauses.
CO4	Define Branching and Looping Statements.
▪ **Mini Project**	
CO1	Design application software after understanding the problem.
CO2	Design application for application.
CO3	Design input form, output report and interface.
CO4	Draft report document.
❖ **SEM-VI**	
▪ **Strategic Management**	
CO1	Define strategic management & its process.
CO2	Explain different level of strategic.
CO3	Describe the strategic decisions that organisations make and have an ability to engage in strategic planning.
CO4	Explain strategic management process to help with formulation of organizational vision, mission and goals.
CO5	Define inter relationship between strategy formulation & Evaluation.
CO6	Define the Implementing and Executing the Tactics.

▪ **Data Mining and Data Warehousing**	
CO1	Explain the concept of Data mining and warehouse.
CO2	Define the concept of promotion, transfer and demotion.
CO3	Identify what kinds of technologies are used for different application.
CO4	Design implements classical models and algorithms in data warehouses.
CO5	Analyze the different data by using Clustering and its algorithm.
CO6	Design Software for Data mining and application of Data mining.
▪ **Linux Operating System**	
CO1	Explain Linux Operating system, kernel and basic Shell
CO2	Define the concept of File handling and directories.
CO3	Discuss various scheduling and swapping policies.
CO4	Explain operating system virtualises CPU and memory.
CO5	Apply the different types of command in vi editor.
CO6	Develop Simple shell programming Language.
▪ **Java Programming**	
CO1	Define the java programming related aspects.
CO2	Describe the package of data and its variables.
CO3	Design input in a Java program.
CO4	Define elementary modifications to Java programs that solve real-world problems.
CO5	Develop projects.
CO6	Draft build up applet code.
▪ **Lab Course based on Paper no.- 603**	
CO1	Explain the concept of Login and logout Procedure.
CO2	Define change file access permissions using chmod and confirm using ls –l command.

CO3	Apply filter commands.
CO4	Describe Shell script and its looping concept (if else, while, for, switch).
▪ **Lab Course based on Paper no. 604**	
CO1	Define java programs**.**
CO2	Explain the package of software environment.
CO3	Design projects on web technology.
CO4	Apply build up applet code.
▪ **Major Project**	
CO1	Design application software after understanding the problem.
CO2	Design application for application.
CO3	Design input form, output report and interface.
CO4	Draft report document.