



## DEPARTMENT OF B.B.A. (COMPUTER APPLICATION)

### B.B.A.(Computer Application)

After successful completion of **BBA(CA)** Programme students will be able to:

#### Program Outcomes :

##### **PO1: COMPUTATIONAL KNOWLEDGE:**

Apply knowledge of computing fundamentals, mathematics and domain knowledge appropriate for the conceptualization of computing models.

##### **PO2: PROBLEM ANALYSIS:**

Identify, formulate, research literature, and analyses complex problems reaching substantiated conclusions using principles of mathematics, natural sciences and computer sciences.

##### **PO3: DESCRIBE / DESIGN/DEVELOPMENT OF SOLUTIONS:**

Design solutions for complex computer science problems and design system components or processes or programs that meet the specified needs with appropriate consideration for public health and safety and cultural, societal, and environmental considerations. i.e. to Discuss / design software development fundamentals, including programming, data structures, algorithms and complexity.

##### **PO4: CONDUCT INVESTIGATIONS OF COMPLEX PROBLEMS:**

Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions. i.e. Illustrate the concepts of systems fundamentals, including architectures and organization, operating systems, networking and communication.

##### **PO5: MODERN TOOLS/SOFTWARE /PROGRAMMING LANGUAGE USAGE:**

Create, select, and apply appropriate techniques, resources, and modern





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IT tools, including prediction and modelling to complex activities, with an understanding of the limitations. i.e. Gain the knowledge about software engineering fundamentals, including software analysis and design, evaluation and testing, and software engineering processes.

**PO6: ENVIRONMENT AND SUSTAINABILITY:**

Understand the impact of the professional IT solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO7: PROFESSIONAL SKILLS:**

Develop hard skills and soft skills through various tools, case studies. Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share the views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups. Understand the roles and responsibilities of the professional.

**PO8: CRITICAL THINKING FOR PROBLEM SOLVING:**

Identify, analyze, formulate, Design and develop the real world requirements by critical thinking for complex problems in IT enabled services.

**PO9: COOPERATION AND TEAMWORK:**

Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.

**PO10: ENTREPRENEURIAL DEVELOPMENT:**

Impart knowledge required for planning, designing and building complex Software Application, automated systems. Develop business expertise, analytical skills, financial literacy necessary to appreciate the



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dynamic nature of commerce and industry.

**PO11: GOAL ORIENTED AND LIFELONG LEARNING:**

Ability to acquire knowledge and skills, including learning how to learn that are necessary for participating in learning activities throughout life. Develop technical Knowledge for immediate employment and for life-long learning in advanced areas of computer science and related fields.

**Program Specific Outcome:**

After successfully completing B.B.A (C.A.) Programme students will have :

**PSO1:** The ability to understand, analyze and develop computer programs in different areas.

**PSO2:** Fundamental knowledge of computers, computer organization and C programming.

**PSO3:** Knowledge of Relational Database Management System and Advanced Database Management System.

**PSO4:** Practical knowledge of Networking and Data structures.

**PSO5:** Practical knowledge of Advanced Web Technology.

**PSO6:** Learn and practically use various programming languages.

**PSO7:** Understand and apply software engineering concepts in software Project development through teamwork.

**Course Outcomes:**

**F. Y. BBA(CA) SEMESTER I**

**CA-101 : Business Communication :**

After successful completion of this course, students will be able to:

CO1: Know the values of communication.

CO2: Implement channels of communication.

CO3: Improve skills set to cope with corporate challenges.

CO4: Understand the system of communications.





### **CA-102 : Principles of Management :**

After successful completion of this course, students will be able to:

CO1: Know the process to have errorless results.

CO2: Have unidirectional efforts and understanding.

CO3: Create future knowledgeable leaders and ownership culture.

### **CA-103 : C Programming :**

After successful completion of this course, students will be able to:

CO1: Develop basic knowledge about C.

CO2: Write algorithm and draw flowchart to solve a given problem.

CO3: Interpret use of appropriate data type, control statements, looping and decision making statements to build logic.

CO4: Utilize the knowledge about Pointer, Functions, Arrays and Structures to design various C-program.

### **CA-104 : Database Management System :**

After successful completion of this course, students will be able to:

CO1: Understanding the Traditional way of organizing, manipulating and accessing data.

CO2: Design E-R Model for given requirements.

CO3: Formulate database queries using relational algebra.

CO4: Formulate database queries using SQL.

CO5: Design a database in appropriate normal form.

### **CA-105 : Statistics :**

After successful completion of this course, students will be able to:

CO1: Describe and discuss the role and importance of statistics in





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Various business situations. Organize, manage and present data. Graphically. Analyze statistical data graphically using frequency distributions and cumulative frequency distribution.

CO2: Develop skills related with basic statistical technique and able to analyze statistical data using measures of central tendency.

CO3: Analyze statistical data using measures of dispersion and location.

CO4: Develop right understanding regarding tools like correlation and regression, used for comparison of variables and data Interpretation.

**CA-106: Computer Laboratory Based on 103 &104 :**

After successful completion of this course, students will be able to:

CO1: Implement the algorithms and draw Flowcharts.

CO2: Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor.

CO3: Enhance their analyzing and problem solving skills and use the same for writing programs in C.

**CA-107 : Add-On Principles of programming and Algorithms**

After successful completion of this course, students will be able to:

CO1: Develop analytical/ logical thinking.

CO2: Improve problem solving capabilities.

CO3: Learn various types of flowcharts & algorithms.

CO4: Learn searching and sorting techniques.



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## F. Y. BBA(CA) SEMESTER II

### **CA-201 : Organization Behavior & Human Resource Management :**

After successful completion of this course, students will be able to:

- CO1: Understand the concept of HRM & OB.
- CO2: Develop knowledge about recent trends.
- CO3: Understand recent trends in recruitment and selection.
- CO4: Develop different evaluation skills.

### **CA-202 : Financial Accounting :**

After successful completion of this course, students will be able to:

- CO1: Prepare basic financial transactions.
- CO2: Understand the kind of accounting relationship between customer and bank & write necessary set of entries in books of accounts and in cash book and compare them with bank statement to understand their implications and effect.
- CO3: Understand growing importance of software and know how to use software and to write books of accounts & use software like tally for writing of accounts.

### **CA-203 : Business Mathematics :**

After successful completion of this course, students will be able to:

- CO1: Learn how to apply the various concepts in business situation.
- CO2: Understand how to examine concept of discounts in different business solutions.
- CO3: Learn how to Work with simple and compound interest, annuities, invoice preparation, trade discounts, taxes.
- CO4: Understand how to Perform the matrix operations of addition,







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multiplication and transposition and express a system of simultaneous linear equations in matrix form 2. Determine whether or not a given matrix is invertible and if it is, find its inverse.

CO5: Learn how to Develop linear programming (LP) models.

CO6: Understand the mathematical tools that are needed to solve Optimization problems. Use mathematical software to solve the Proposed models.

**CA-204 : Relational database :**

After successful completion of this course, students will be able to:

CO1: Understand of various RDBMS products.

CO2: Understand of various programming aspects of PL/SQ, Writing of compact code (Small program writing), Writing of triggers and Packages.

CO3: Understand use of transaction and effect on database. Learn how to overcome concurrency problem Using serializability concept.

CO4: Learn how to prevent deadlock situation and Data recovery from various failures with different techniques.

**CA-205 : Web Technology HTML-JS-CSS :**

After successful completion of this course, students will be able to:

CO1: Develop a dynamic webpage by the use of java script and CSS.

CO2: Use knowledge of HTML and CSS code and an HTML editor to create personal and/or business websites following current Professional and/or industry standards.



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### **CA-206 : Computer Laboratory Based on 204 & 205 :**

After successful completion of this course, students will be able to:

- CO1: Develop web based application using suitable client side and server side web technologies.
- CO2: Develop solution to complex problems using appropriate method, technologies, frameworks, web services and content management.
- CO3: Use database techniques such as SQL & PL/SQL.

### **CA-207 : Add-On (Advance C) :**

After successful completion of this course, students will be able to:

- CO1: Give the students' knowledge about the more advanced features of the C language.
- CO2: Understand the concept of Pointers, Implementation.
- CO3: Develop the ability to analyze a problem, develop an algorithm to solve it.
- CO4: Understand the concepts of File Handling.
- CO5: Understand the concepts of Graphics Programming.

## **S. Y. BBA(CA) SEMESTER III**

### **CA-301 : Digital Marketing :**

After successful completion of this course, students will be able to:

- CO1: Understanding the concept of e commerce and Internet Marketing by using Search Engine Optimization, Search Engine Marketing, Email Marketing, Digital Display Marketing.
- CO2: Explain Differences between traditional and digital marketing tools And techniques. Overview of Digital Marketing types such as Internet, Social Media and Mobile.
- CO3: Learn how to perform target group analysis and performing







SWOT analysis with case study.

CO4: Learn to optimize the website using Qualitative and Quantitative Tools.

CO5: Learn to write SEO content.

CO6: Learn developing an effective marketing strategy using CRM Interactions with a customer, capturing key information generated during interaction.

CO7: Gain practical knowledge about digital marketing using various ways such as Internet, Email, Social media.

CO8: Student will able to use various Digital Marketing tools such as Google Ads, FaceBook Ads, Google Analytic, Zapier, Google Keyword Planner.

### **CA-302 : Data Structure :**

After successful completion of this course, students will be able to:

CO1: Understand the concepts of ADTs.

CO2: Understand sorting, searching algorithms.

CO3: Learn linear data structures – lists, stacks, and queues.

CO4: Learn to apply Tree and Graph structures.

### **CA-303 : Software Engineering :**

After successful completion of this course, students will be able to:

CO1: Understand the system concept and Identify unique features of various software application domains and classify software applications.

CO2: Choose and apply appropriate lifecycle model of software Development.

CO3: Identify user needs and formulate software specifications, and





Able to develop the SRS document for project.

CO4: Analyze software requirements by applying various modeling Techniques.

CO5: Identify different types of risks in software development and able to distinguish different testing strategies and it's working.

CO6: Estimate the quality of software process and make software Maintains.

### **CA-304 : Angular JS :**

After successful completion of this course, students will be able to:

CO1: Build RIA using Angular.js.

CO2: Exploit two-way binding offered by Angular.js.

CO3: Understand and use various directives offered by Angular.js.

CO4: Create custom directives.

CO5: Use bower.js for client-side dependency management.

CO6: Understand Client Side MVC and SPA.

CO7: Develop an AngularJS Single Page Application.

CO8: Create and bind controllers with JavaScript, apply filter in AngularJS application.

### **CA-305 : Big data :**

After successful completion of this course, students will be able to:

CO1: Understand different types of digital data, Characteristics of Big data, Applications of big data.

CO2: Understand Basics of Analytics, Types of Analytics, Population and Sampling methods.

CO3: Learn Basics of Machine Learning, Recognize the characteristics of machine learning that make it useful to real-world problems.





Supervised and Unsupervised Learning.

CO4: Learn Data Analytics with Weka and R, Acquire understanding of Data Manipulation and Data Visualization.

**CA-306 : Computer Laboratory Based on 302 , 304 and 305:**

After successful completion of this course, students will be able to:

CO1: Apply appropriate data structures for the given problem.

CO2: Design an efficient algorithm for the given problem.

CO3: Know about AngularJS Component and Familiar with the Angular js Framework.

CO4: Develop an AngularJS Single Page Application CO5:Create and bind controllers with JavaScript.

CO5: Develop analytical, creative, problem solving skills.

**307 AECC : Basic Course in Environmental Awareness :**

After successful completion of this course, students will be able to:

CO1: Acquire the knowledge, values, attitudes, commitment, and skills needed to protect and improve the environment.

CO2: Understand Various Environmental Pollution, Causes & effects on human beings & also Describe what is being done and what we all can do to help and prevent from harm to the environment.

CO3: Develop conscious towards a cleaner and better managed environment & to promote green practices at home and at work.

**S. Y. BBA(CA) SEMESTER IV**

**CA-401 : Networking :**

After successful completion of this course, students will be able to:

CO1: Understand Basics of computer network.

CO2: Learn different network model.





CO3: Compare and contrast different transport medias.

CO4: Understand Wire and Wireless LAN.

CO5: Learn different network devices.

CO6: Understand Required security constraint.

### **CA-402 : Object Oriented Concepts Through CPP :**

After successful completion of this course, students will be able to:

CO1: Describe the object-oriented programming approach in connection with C++ & Apply the concepts of object-oriented programming.

CO2: Articulate the principles of object-oriented problem solving and programming , outline the essential features and elements of the C++ programming language , Explain programming fundamentals, including statement and control flow and recursion.

CO3: Apply the concepts of class, method, instance, data abstraction, function abstraction & Analyze, write, debug, and test basic C++ codes using the approaches introduced in the course.

CO4: Apply the concepts of class, method, instance, constructor and Destructor & Analyze, write, debug, and test C++ programs using constructor and destructor.

CO5: Apply the concepts of class, method, inheritance and its concepts. & Analyze, write, debug, and test C++ codes using the approaches introduced in the course.

CO6: Apply the concepts of class, method, polymorphism, overloading, overriding and its concepts & Analyze, write, debug, and test basic C++ codes using the approaches introduced in the course.

CO7: Illustrate the process of data file manipulations using C++.

CO8: Managing input & output console using C++





CO9: Understand exception handling with C++ & analyze problems and implement simple C++ applications using an object-oriented software engineering approach.

### **CA-403 : Operating System :**

After successful completion of this course, students will be able to:

CO1: Understand services provided by the operating system.

CO2: Learn concept of Process and Memory Management.

CO3: Learn scheduling concept and scheduling algorithm.

CO4: Learn Memory Management schemes like contiguous and noncontiguous allocation.

CO5: Learn concept of deadlock, various deadlock avoidance and prevention algorithms.

CO6: Learn I/O Systems and Disk Management.

### **CA-404 : Node – JS :**

After successful completion of this course, students will be able to:

CO1: Understand the JavaScript and technical concepts behind Node JS.

CO2: Understand Structure a Node application in modules.

CO3: Understand and use the Event Emitter.

CO4: Understand Buffers, Streams, and Pipes.

CO5: Build a Web Server in Node and understand how it really works.

CO6: Connect to a SQL or Mongo database in Node.

### **CA-405 : Project :**

After successful completion of this course, students will be able to:

CO1: Create a static website using HTML and add dynamic functionality to it by using java Script.

CO2: Gain confidence to create dynamic website on real world problems.





### **CA-406 : Computer Laboratory Based on 402,404 :**

After successful completion of this course, students will be able to:

- CO1: Write programs using C++ features like operator overloading, constructor and destructor, inheritance, polymorphism and exception handling.
- CO2: Build a Web Server in Node and understand how it really works.
- CO3: Connect to a SQL or Mongo database in Node.

### **T. Y. BBA(CA) SEMESTER V**

#### **CA-501 : Cyber Security**

After successful completion of this course, students will be able to:

- CO1: Understand Cyber Security and the Tools.
- CO2: Identify the different types of Cyber Crimes.
- CO3: Understand the Cyber laws.
- CO4: Develop Cyber forensics awareness.
- CO5: Identify attacks, security policies and credit card frauds in mobile and Wireless Computing Era.

#### **CA-502: Object Oriented Software Engineering**

After successful completion of this course, students will be able to:

- CO1: Understand the concept of system design and UML.
- CO2: Articulate classes and objects from specified requirement set.
- CO3: Understand how to sketch different UML diagrams.
- CO4: Explain the change in analysis constraints from traditional approach to object oriented paradigm.
- CO5: Compare and contrast different methodologies useful for software designing process.







### **CA-503:Core Java**

After successful completion of this course, students will be able to:

CO1: Understand Java Fundamentals, core principles of the Java Language.

CO2: Understand various concepts like Class, Objects, encapsulation, inheritance, polymorphism, interfaces, nested classes, exception handling, and wrapper classes, file handling.

CO3: Understand various collections like Array List, Linked List, Hash Set class.

CO4: Understand file and exception handling using in built class

CO5: Apply various concepts and develop programs using Applet, AWT, Swing Applications.

### **CA-504: MongoDB**

After successful completion of this course, students will be able to:

CO1: Learn to work with MongoDB shell and MongoDB tools.

CO2: Design Schema, Data modelling and all sorts of CRUD Operations.

CO3: Learn to optimize query performance.

CO4: Analyze the data stored in Mongo

### **CA-504:Python**

After successful completion of this course, students will be able to:

CO1: Understanding the basic concept in Python, variables and constants.

CO2: Learn concept of files and study modules and packages.

CO3: Learn Object Oriented Concepts, inheritance.

CO4: Understanding concept of exception, techniques to handle exceptions

CO5: Study Tkinter programming and understand about frames, buttons,





labels etc.

CO6: Understand static analysis, data visualization, data modeling and machine learning.

### **CA-505:Project**

After successful completion of this course, students will be able to:

CO1: Learn the SDLC .

CO2: Understand the programming concept, how to make connectivity to database.

CO3: Understand how to develop report.

### **CA-506:Computer Laboratory Based on 503 and 504**

After successful completion of this course, students will be able to:

CO1: Understand fundamentals of programming such as variables, conditional and iterative execution, methods, etc.

CO2: Use the Java SDK environment to create, debug and run simple Java Programs.

CO3: Demonstrates how to achieve reusability using inheritance, interfaces and packages .

CO4: Identify and describe common abstract user interface components to design GUI in Java using Applet & AWT along with response to events.

CO5: Design GUI in Java using Applet & AWT along with response to events .

CO6: Solve java programs using JDBC.

CO7: Use JSP in programming.

### **CA-507: Internet of Things (IoT)**

After successful completion of this course, students will be able to:





- CO1: Explain key technologies, smart objects, IoT Architecture and security in Internet of Things.
- CO2: Illustrate the role of IoT protocols for efficient network communication.
- CO3: Understand IoT platform such as Arduino Uno.

## T. Y. BBA(CA) SEMESTER VI

### CA-601: Recent Trends in IT

After successful completion of this course, students will be able to:

- CO1: Discuss the basic concepts AI.
- CO2: Apply basic, intermediate and advanced techniques to mine the data.
- CO3: Provide an overview of the concept of Spark programming.

### CA-602 : Software Testing

After successful completion of this course, students will be able to:

- CO1: Understand software testing Basics and its importance in SDLC.
- CO2: Understand approaches used in software testing.
- CO3: Identify how to test a software in different environment.
- CO4: Explain different strategies of testing and design complexity Metrics.
- CO5: Describe difference between manual testing and automation.
- CO6: Understand software testing tools and quality terms

### CA-603 : Advanced Java

After successful completion of this course, students will be able to:

- CO1: Know the concepts of JDBC Programming.
- CO2: Understand the concepts of Multithreading and Socket Programming.





CO3: Know the concepts of Spring and Hibernate.

CO4: Develop the project by using JSP and JDBC.

CO5: Develop applications in Spring and hibernate.

### **CA-604 :Android Programming**

After successful completion of this course, students will be able to:

CO1:Write simple GUI applications, use built-in widgets and components, work with the database to store data locally, and much more.

CO2:Demonstrate their understanding of the fundamentals of Android operating systems.

CO3:Demonstrate their skills of using Android software development Tools.

### **CA-604 : Dot Net Framework**

After successful completion of this course, students will be able to:

CO1:Use the features of Dot Net Framework along with the features of VB, C# and ASP.

CO2: Design and develop window based and web based .NET applications.

CO3: Design and develop a Website.

CO4: Design and Implement database connectivity using ADO.NET for VB, C# and ASP.

### **DSE– 605: Project**

CO1: Learn the basic concept of Programming.

CO2: Understand how to use programming in day to day applications.

CO3: Learn Database connection, Servlets, jsp real world applications.

### **CA-606 :Computer Laboratory Based on 603 and 604**

After successful completion of this course, students will be able to:

CO1: Implement the theory learnt in 603 and 604 through various





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practical assignments.

**CA-607 :Soft Skill**

After successful completion of this course, students will be able to:

- CO1: Understand the significance and essence of a wide range of soft Skills.
- CO2: Learn how to apply soft skills in a wide range of routine social and professional settings.
- CO3: Learn how to employ soft skills to improve interpersonal relationships.
- CO4: Learn how to employ soft skills to enhance employability and ensure workplace and career success.



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