



SHRI DHARMASTHALA MANJUNATHESHWARA COLLEGE OF BUSINESS MANAGEMENT

MANGALURU – 575 003 (DAKSHINA KANNADA)

Office : 0824-2494186
Principal : 0824-2496980

NAAC Reaccredited (2017)
with 'A' Grade

Fax : 0824-2494186
Email : sdmcbm@sdmcbm.ac.in
Website : www.sdm.ac.in

BACHELOR OF COMPUTER APPLICATIONS (B.C.A.)

COURSE OUTCOMES

CHOICE BASED CREDIT SYSTEM (CBCS)

(2017~18 Batch onwards)

COURSE OUTCOMES (COs)

FIRST SEMESTER

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| Semester | I SEMESTER |
| Subject | FUNDAMENTALS OF INFORMATION TECHNOLOGY |
| Code | BCAC 131 |
| Learning Objectives | To impart the knowledge about the evolution of computers, classification, various peripherals of computers, types of software's etc. |
| Learning Outcomes | Upon the completion of this course, the students will be able to: CO1: Identify various devices and their working principles. CO2: Use various features of word document CO3: Create power point presentation with variety of animation and transition CO4: Manipulate spreadsheet viz. how to use the formula easily, designing the graph, filtering CO5: Design database, insert records and querying in various ways. |

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| Semester | I SEMESTER |
| Subject | PROBLEM SOLVING USING C |
| Code | BCAC 132 |
| Learning Objectives | <ol style="list-style-type: none">1. To develop skills in solving problems,2. To obtain knowledge about the structure of the programming language C and3. To develop the logical thinking and program writing skill. |
| Learning Outcomes | Upon the completion of this course, the students will be able to: CO1: Understand the basic procedure of algorithm and flowchart which are basic concepts a programmer needs to know. CO2: Know about decision making and looping concepts CO3: Know the meaning and advantages of using arrays CO4: Apply programming knowledge to create solutions to challenging problems, including specifying, designing, implementing and validating solutions for new problems CO5: Design structures and file related programs. |

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| Semester | I SEMESTER |
| Subject | COMPUTER ORGANISATION |
| Code | BCAC 133 |
| Learning Objectives | <ol style="list-style-type: none"> 1. To introduce the number system and Boolean algebra. 2. To enable the students to understand the design components of a digital subsystem that required for realizing the various components such as Register, Counter etc. |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able to :</p> <p>CO1: Solve the problems in various number systems.</p> <p>CO2: Simplify the Boolean expressions by applying various postulates and theorems.</p> <p>CO3: Design and verify the truth table of Components of Computer System like logical gates using Universal gates.</p> <p>CO4: Design combinational circuits such as adders, comparator, multiplexer, decoder, subtractor etc.</p> <p>CO5: Design the sequential circuit such as registers and various counters.</p> |

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| Semester | I SEMESTER |
| Subject | OFFICE AUTOMATION LAB |
| Code | BCAP 134 |
| Learning Objectives | To learn various features available in MS-PowerPoint, MS-Excel, MS-Access, MS-Word |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able to :</p> <p>CO1: Prepare presentations using Power Point with various transition and animations.</p> <p>CO2: Prepare word documents with various formatting features, mail merge, tables and drawing tools.</p> <p>CO3: Create spreadsheet with formulae, charts, filtering etc.</p> <p>CO4: Design database using MS-Access and apply various queries to retrieve records</p> |

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| Semester | I SEMESTER |
| Subject | C PROGRAMMING LAB |
| Code | BCAP 135 |
| Learning Objectives | To learn the programming logic for problems with decision making, looping, arrays, structures and files. |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able to write programs with:</p> <p>CO1: Simple logic involving if, switch, for and while loops.</p> <p>CO2: Single- and two-dimensional arrays.</p> <p>CO3: User defined and recursive functions.</p> <p>CO4: Pointer concepts.</p> <p>CO5: Structures and files</p> |

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| Semester | I SEMESTER |
| Subject | INTERNET BASICS AND HTML |
| Code | BCACE 136-E1 |
| Learning Objectives | <ol style="list-style-type: none"> 1. Define HTML and common terminology related to HTML. 2. Recognize correct HTML syntax. 3. Be able to write a brief, error-free HTML code. 4. Learn how to combine basic HTML elements to create Web pages. 5. Understand how to use HTML tags and tag attributes to control a Web page's appearance. 6. Learn how to add absolute URLs, relative URLs, and named anchors to your Web pages. 7. Find out how to use tables and frames as navigational aids on a Web site. 8. Get the answers to all you question about copyright law and the Web. |
| Learning Outcomes | <p>At the end of the course the students will be able to</p> <p>CO1: Understand features of Internet and email.</p> <p>CO2: Develop Simple web pages using HTML & Style Sheets.</p> |

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| Semester | I SEMESTER |
| Subject | COMPULSORY FOUNDATION COURSE IN ENGLISH |
| Code | BCAENL 131 |
| Learning Objectives | <ol style="list-style-type: none"> 1. To enable the learner to communicate in real-life situations effectively and appropriately 2. To use English effectively throughout the curriculum for study purposes 3. To develop interest in and appreciation of Literature 4. To develop and integrate the use of the four language skills i.e., Reading, Listening, Speaking and Writing |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able:</p> <p>CO1: To learn reading with comprehension which help the learners to acquire new vocabulary and content.</p> <p>CO2: To read with correct pronunciation, stress, intonation, pause and articulation of voice.</p> <p>CO3: To analyze the various elements of poetry, such as diction, tone, form, genre, imagery, figures of speech, symbolism, and theme.</p> <p>CO4: To critically examine the value and standard of the poem.</p> <p>CO5: To acquire and improve their skills in the four literacy methods: writing, talking, reading and listening.</p> <p>CO6: To increase their awareness of the correct use in writing and speaking of English grammar.</p> |

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| Semester | I SEMESTER |
| Subject | HINDI |
| Code | BCAHDL131 |
| Learning Objectives | <ol style="list-style-type: none"> 1. अवकाश के सदुपयोग का उद्देश्य 2. जीविकोपार्जन का उद्देश्य |
| Learning Outcomes | <p>CO1: कहानी के माध्यम से जीवन की वास्तविकता और आदर्श का चिंतन।</p> <p>CO2: हिन्दी कहानी के बारे में जानकारी प्राप्त होगी।</p> <p>CO3: परिवेश सृजन और रचनात्मक अभिव्यक्ति।</p> |

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| Semester | I SEMESTER |
| Subject | KANNADA |
| Code | BCAKAL 131 |
| Learning Objectives | <p>ಗಣಕ ಕ್ಷೇತ್ರದಲ್ಲಿ ಕನ್ನಡವನ್ನು ಪರಿಣಾಮಕಾರಿಯಾಗಿ ಬಳಸುವುದಕ್ಕೆ ಹಾಗೂ ತಿಳಿದುಕೊಳ್ಳುವಲ್ಲಿ ವಿದ್ಯಾರ್ಥಿಗಳನ್ನು ಸಜ್ಜುಗೊಳಿಸುವುದು</p> |
| Learning Outcomes | <p>ಕನ್ನಡ ಕಲಿಕೆಯಿಂದ ಗಣಕ ನಿಕಾಯದ ವಿದ್ಯಾರ್ಥಿಗಳು ಪಡೆಯುವ ಪ್ರಯೋಜನ:</p> <p>CO1: ಗಣಕ ಕ್ಷೇತ್ರದಲ್ಲಿ ಕನ್ನಡವನ್ನು ಪರಿಣಾಮಕಾರಿಯಾಗಿ ಬಳಸುವುದಕ್ಕೆ ಹಾಗೂ ತಿಳಿದುಕೊಳ್ಳುವಲ್ಲಿ ವಿದ್ಯಾರ್ಥಿಗಳು ಸಜ್ಜಾಗುವರು .</p> <p>CO2: ಇಂದಿನ ತಂತ್ರಜ್ಞಾನ ಯುಗದಲ್ಲಿ ಅಗತ್ಯವಾದ ಕನ್ನಡವನ್ನು ರೂಪಿಸಿ, ಗಣಕ ಕ್ಷೇತ್ರಕ್ಕೆ ಬೇಕಾದ ತಾಂತ್ರಿಕ ವಿಷಯಗಳನ್ನು, ಪರಿಭಾಷೆಯನ್ನು ಕನ್ನಡದಲ್ಲಿ ತಿಳಿದುಕೊಳ್ಳುವರು.</p> <p>CO3: ವಿದ್ಯುನ್ಮಾನ ಯುಗದಲ್ಲಿ ಸಾಹಿತ್ಯದಿಂದ ವಿಮುಖರಾಗುತ್ತಿರುವ ಯುವ ಪೀಳಿಗೆಗೆ ಸಾಹಿತ್ಯದಡೆಗೆ ಒಲವು ಮೂಡುವಂತೆ ಮಾಡುವುದು.</p> |

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| Semester | I SEMESTER |
| Subject | CONSTITUTION OF INDIA |
| Code | BCACIF 131 |
| Learning Objectives | <p>To enable the students to:</p> <ol style="list-style-type: none"> 1. Acquire a complete and detailed understanding on Constitution of India. 2. Elicit the knowledge on Constitutional issues. |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able to:</p> <p>CO1: Understand the principle and structure of the Constitution of India.</p> <p>CO2: Generate Awareness on Fundamental Rights and Fundamental Duties.</p> <p>CO3: Enrich the knowledge on Constitutional Functionaries of the state.</p> <p>CO4: Understand the organization and Structure of Central / State Government.</p> <p>CO5: Develop insight on Role of Judiciary in India.</p> |

SECOND SEMESTER

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| Semester | II SEMESTER |
| Subject | BASIC MATHEMATICS |
| Code | BCAC 181 |
| Learning Objectives | To learn foundation of mathematics like Algebra, Trigonometry, Calculus, Set Theory, Logical Statements, Relations and Matrix Algebra |
| Learning Outcomes | Upon the completion of this course, the students will be able to: CO1: Understand the foundations of mathematics. CO2: Know the use of Trigonometry and Matrix in computer application. CO3: Perform computations in mathematics. CO4: Develop problem-solving skills required for Computer Applications. |

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| Semester | II SEMESTER |
| Subject | OBJECT ORIENTED PROGRAMMING USING C++ |
| Code | BCAC 182 |
| Learning Objectives | To learn the concept of Object-Oriented Programming and Create Software applications using OOPs Concept in C++. |
| Learning Outcomes | Upon the completion of this course, the students will be able to: CO1: Realize the various operators statements used in C++. CO2: Create class and objects with constructors, destructors, friend functions etc. CO3: Know the concepts such as Operator overloading, inheritance, containership etc. CO4: Apply the major object-oriented concepts to implement object-oriented programs in C++. CO5: Learn any other OOP language such as Java, C# easily. |

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| Semester | II SEMESTER |
| Subject | DATABASE CONCEPTS AND ORACLE |
| Code | BCAC 183 |
| Learning Objectives | <ol style="list-style-type: none"> 1. To provide knowledge about RDBMS Concepts, SQL Concepts and PL / SQL Programming and database normalization . 2. To learn theory involved in data models and query Languages. |
| Learning Outcomes | Upon the completion of this course, the students will be able to: CO1: Describe data models and schemas in DBMS. CO2: Understand the features of database management systems and Relational database. CO3: Demonstrate the relational data model and use of SQL. CO4: Know the functional dependencies and use of SQL solutions to a broad range of query and data update problems. CO5: Apply the concepts such as procedures, triggers, cursors and packages in a PL / SQL program. |

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| Semester | II SEMESTER |
| Subject | C++ LAB |
| Code | BCAP 184 |
| Learning Objectives | To learn about various applications of OOPs concepts practically with C++ programming |
| Learning Outcomes | Upon the completion of this course, the students will be able to: CO1: Create programs with classes and objects. CO2: Use member functions and friend functions. CO3: Write programs for real world problems. CO4: Illustrate operator overloading concepts. CO5: Write programs applying various types of inheritance. |

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| Semester | II SEMESTER |
| Subject | DBMS LAB |
| Code | BCAP 185 |
| Learning Objectives | To learn how to apply various RDBMs concepts practically. |
| Learning Outcomes | Upon the completion of this course, the students will be able to: CO1: Create tables, insert records, modify table structure, delete table and apply queries in various ways. CO2: Write queries for retrieving data from more than one related tables (Joining). CO3: Write programs using procedures, functions, cursors and triggers. CO4: Create program with packages. CO5: Design the database for any organization effectively. |

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| Semester | II SEMESTER |
| Subject | ELECTIVE – II EXPANDED COURSE BIG DATA ANALYTICS |
| Code | BCACE 187-E2 |
| Learning Objectives | 1. To provides an overview of approaches facilitating data analytics on huge datasets. 2. To Introduce various Technologies for Handling Big Data |
| Learning Outcomes | Upon the completion of this course, the students will be able to know about: CO1: Exploring the use of Big Data in Business Context. CO2: Technologies for Handling Big Data CO3: Hadoop Ecosystem. CO4: Techniques to Optimize MapReduce Jobs. CO5: Big Data Analysis and data Warehouse and Changing Deployment Models in Big DataEra |

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| Semester | II SEMESTER |
| Subject | COMPULSORY FOUNDATION COURSE IN ENGLISH |
| Code | BCAENL 181 |
| Learning Objectives | <ol style="list-style-type: none"> 1. To enable the learner to communicate in real-life situations effectively and appropriately 2. To use English effectively throughout the curriculum for study purposes 3. To develop interest in and appreciation of Literature 4. To develop and integrate the use of the four language skills i.e., Reading, Listening, Speaking and Writing |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able to:</p> <p>CO1: Learn reading with comprehension which help the learners to acquire new vocabulary and content</p> <p>CO2: Read with correct pronunciation, stress, intonation, pause and articulation of voice.</p> <p>CO3: Analyze the various elements of poetry, such as diction, tone, form, genre, imagery, figures of speech, symbolism, and theme.</p> <p>CO4: Critically examine the value and standard of the poem.</p> <p>CO5: Acquire and improve their skills in the four literacy methods: writing, talking, reading and listening.</p> <p>CO6: Increase their awareness of the correct use in writing and speaking of English grammar</p> |

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| Semester | II SEMESTER |
| Subject | HINDI |
| Code | BCAHDL 181 |
| Learning Objectives | <ol style="list-style-type: none"> 1. छात्रों के चरित्र का उद्देश्य 2. किसी भी परिस्थिति या वातावरण के समयोजना का उद्देश्य |
| Learning Outcomes | <p>CO1: कविता के विविध रूप का परिचय मिलना</p> <p>CO2: व्यावहारिक हिन्दी का परिचय मिलना</p> <p>CO3: भाषा कौशल का निर्माण</p> |

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| Semester | II SEMESTER |
| Subject | KANNADA |
| Code | BCAKAL 181 |
| Learning Objectives | ಕನ್ನಡ ಸಾಹಿತ್ಯದ ಮೂಲಕ ಇಂದಿನ ತಂತ್ರಜ್ಞಾನಕ್ಕೆ ಅನುಗುಣವಾಗಿ, ಗಣಕ ನಿಕಾಯದ ವಿಧ್ಯಾರ್ಥಿಗಳಿಗೆ ಗಳಿಗೆ ಬೇಕಾದ ತಾಂತ್ರಿಕ ವಿಷಯಗಳನ್ನು, ಅದರ ಪರಿಭಾಷೆಯಲ್ಲಿ ತಿಳಿಸುವುದು |
| Learning Outcomes | <p>CO1: ಗಣಕ ಕ್ಷೇತ್ರದಲ್ಲಿ ಕನ್ನಡವನ್ನು ಪರಿಣಾಮಕಾರಿಯಾಗಿ ಬಳಸುವುದಕ್ಕೆ ಹಾಗೂ ತಿಳಿದುಕೊಳ್ಳುವಲ್ಲಿ ವಿದ್ಯಾರ್ಥಿಗಳು ಸಜ್ಜಾಗುವರು.</p> <p>CO2: ಇಂದಿನ ತಂತ್ರಜ್ಞಾನ ಯುಗದಲ್ಲಿ ಅಗತ್ಯವಾದ ಕನ್ನಡವನ್ನು ರೂಪಿಸಿ, ಗಣಕ ಕ್ಷೇತ್ರಕ್ಕೆ ಬೇಕಾದ ತಾಂತ್ರಿಕ ವಿಷಯಗಳನ್ನು, ಅದರ ಪರಿಭಾಷೆಯನ್ನು ಕನ್ನಡದಲ್ಲಿ ತಿಳಿದುಕೊಳ್ಳುವರು.</p> <p>CO3: ವಿದ್ಯುನ್ಮಾನ ಯುಗದಲ್ಲಿ ಸಾಹಿತ್ಯದಿಂದ ವಿಮುಖರಾಗುತ್ತಿರುವ ಯುವ ಪೀಳಿಗೆಗೆ ಸಾಹಿತ್ಯದೊಡನೆ ಒಲವು ಮೂಡುವಂತೆ ಮಾಡುವುದು, ಹಾಗೂ ಕನ್ನಡದ ಬಗೆಗೆ ಒಲವು ವ್ಯಕ್ತಪಡಿಸುವರು</p> |

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| Semester | II SEMESTER |
| Subject | HUMAN RIGHTS |
| Code | BCAHRF 181 |
| Learning Objectives | <ol style="list-style-type: none"> 1. Acquire awareness on Human Rights Issues and Concerns. 2. Enhance citizenship sensitivity and Initiatives. |
| Learning Outcomes | <p>Upon the completion of this course the students will be able to</p> <p>CO1: Enrich their knowledge on Human Rights and Human Values.</p> <p>CO2: Understand the concept of Human Rights.</p> <p>CO3: Promote and protect Human Rights in India.</p> <p>CO4: Focus on issues and concerns in Human Rights.</p> <p>CO5: Equip themselves with international concerns on Human Rights.</p> |

THIRD SEMESTER

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| Semester | III SEMESTER |
| Subject | OPERATING SYSTEMS & LINUX |
| Code | BCAC 231 |
| Learning Objectives | <ol style="list-style-type: none"> 1. The purpose, role, structure, functions and application of operating systems. 2. Services provided by the operating systems. 3. Linux file system and commands |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able to:</p> <p>CO1: Analyze the structure of OS</p> <p>CO2: Understand the basic architectural components involved in designing OS</p> <p>CO3: Analyze the various resource management techniques</p> <p>CO4: Conceptualize the components involved in designing a contemporary OS</p> <p>CO5: Apply the basic commands of Linux Operating system</p> |

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| Semester | III SEMESTER |
| Subject | DATA STRUCTURES |
| Code | BCAC 232 |
| Learning Objectives | <p>To learn about</p> <ol style="list-style-type: none"> 1. Choosing the appropriate data structure and algorithm design method for a specified application. 2. Systematic way of solving problems and various methods of organizing large amounts of data. 3. amounts of data. |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able to:</p> <p>CO1: Demonstrate various methods of organizing large amounts of data.</p> <p>CO2: Choose the appropriate data structure to solve a programming problem.</p> <p>CO3: Apply various sorting and searching techniques.</p> <p>CO4: Understand the operations can be performed with stacks, queues, trees, linked lists and graphs.</p> <p>CO5: Implement these data structures using C language.</p> <p>CO6: Analyze the functioning of few system softwares.</p> |

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| Semester | III SEMESTER |
| Subject | VISUAL BASIC .NET PROGRAMMING |
| Code | BCAC 233 |
| Learning Objectives | To learn 1. Programming with graphical interface using object-oriented concept. 2. Designing the forms. 3. Database connectivity as back-end with VB interface. |
| Learning Outcomes | Upon the completion of this course, the students will be able to: CO1: Develop skill in VB.NET framework CO2: Identify the use of tools and its properties CO3: Write programs and connectivity with databases CO4: Write console application CO5: Use this software effectively in any real project work |

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| Semester | III SEMESTER |
| Subject | OPERATING SYSTEM AND DATA STRUCTURE LAB |
| Code | BCAP 234 |
| Learning Objectives | 1. Various Linux OS commands and Shell scripts 2. The applications of various data structures in technologies. |
| Learning Outcomes | Upon the completion of this course, the students will be able to do the following: CO1: Create and remove folders and files, copy and rename files, searching a pattern in a file. CO2: Granting and removing privileges to the users for the files, creating groups. CO3: Executing simple file-oriented shell scripts. CO4: Sort and search the objects using various techniques. CO5: Using queue, stack, and linked list with various basic operations |

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| Semester | III SEMESTER |
| Subject | VB .NET LAB |
| Code | BCAP 235 |
| Learning Objectives | To learn 1. Programming with graphical interface using object-oriented concept. 2. Designing forms. 3. Database connectivity as back-end with VB interface |
| Learning Outcomes | Upon the completion of this course, the students will be able to: CO1: Create interface including various tools available. CO2: Write the event driven procedures by identifying the suitable events. CO3: Create VB .Net forms with connectivity to the databases. CO4: Write console application. CO5: Design working interfaces for any applications. |

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| Semester | III SEMESTER |
| Subject | HARDWARE AND PC MAINTAIENCE |
| Code | BCACE 236-E1 |
| Learning Objectives | <ol style="list-style-type: none"> 1. To build and maintain computer systems, desktops and peripherals. 2. To learn installing, diagnosing, repairing, maintaining and upgrading softwares. |
| Learning Outcomes | <p>CO1: Assembling computer systems</p> <p>CO2: Installing various operating systems and other softwares.</p> <p>CO3: Troubleshooting computer systems.</p> |

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| Semester | III SEMESTER |
| Subject | COMPULSORY FOUNDATION COURSE IN ENGLISH |
| Code | BCA ENL 231 |
| Learning Objectives | <ol style="list-style-type: none"> 1. To enable the learner to communicate in real-life situations effectively and appropriately 2. To use English effectively throughout the curriculum for study purposes 3. To develop interest in and appreciation of Literature 4. To develop and integrate the use of the four language skills i.e., Reading, Listening, Speaking and Writing |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able:</p> <p>CO1: To identify the story, characters, plot.</p> <p>CO2: To Identify the author's / characters' viewpoint, attitude or opinion.</p> <p>CO3: To enhance · Oral and written communication skills like Accuracy and fluency of expression.</p> <p>CO4: To master the Mechanics of writing; the use of correct punctuation marks and capital letters.</p> <p>CO5: To Practice writing through assignments that ask them to plan, draft, revise and edit your essays over time.</p> <p>CO6: To learn persuasive techniques used in advertising, specifically, pathos or emotion, logos or logic, and ethos or credibility/character. Learners use this knowledge to analyze advertising in a variety of sources: print, television, and Web-based advertisement</p> |

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| Semester | III SEMESTER |
| Subject | HINDI |
| Code | BCAHDL 231 |
| Learning Objectives | <ol style="list-style-type: none"> 1. आत्म अभिव्यक्ति का उद्देश्य 2. वास्तविकता का उद्देश्य |
| Learning Outcomes | <p>CO1: गद्य के तत्वों के आधार पर निबंध रचना की क्षमता प्राप्त होगी</p> <p>CO2: उपन्यास के पठन – पाठन में रूचि उत्पन्न होगी</p> |

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| Semester | III SEMESTER |
| Subject | KANNADA |
| Code | BCAKAL 231 |
| Learning Objectives | ವಿದ್ಯುನ್ಮಾನ ಯುಗದಲ್ಲಿ ಸಾಹಿತ್ಯದಿಂದ ವಿಮುಖರಾಗುತ್ತಿರುವ ಯುವ ಪೀಳಿಗೆಗೆ ಸಾಹಿತ್ಯದಡೆಗೆ ಒಲವು ಮೂಡುವಂತೆ ಮಾಡುವುದು |
| Learning Outcomes | <p>CO1: ಗಣಕ ಕ್ಷೇತ್ರದಲ್ಲಿ ಕನ್ನಡವನ್ನು ಪರಿಣಾಮಕಾರಿಯಾಗಿ ಬಳಸುವುದಕ್ಕೆ ಹಾಗೂ ತಿಳಿದುಕೊಳ್ಳುವಲ್ಲಿ ವಿದ್ಯಾರ್ಥಿಗಳು ಸಜ್ಜಾಗುವರು.</p> <p>CO2: ಇಂದಿನ ತಂತ್ರಜ್ಞಾನ ಯುಗದಲ್ಲಿ ಅಗತ್ಯವಾದ ಕನ್ನಡವನ್ನು ರೂಪಿಸಿ, ಗಣಕ ಕ್ಷೇತ್ರಕ್ಕೆ ಬೇಕಾದ ತಾಂತ್ರಿಕ ವಿಷಯಗಳನ್ನು, ಪರಿಭಾಷೆಯನ್ನು ಕನ್ನಡದಲ್ಲಿ ತಿಳಿದುಕೊಳ್ಳುವುದರ ಜೊತೆಗೆ ನಾಡು ನುಡಿಯ ಬಗೆಯೂ ಮನಸ್ಸು ಜಾಗೃತಗೊಳ್ಳುವುದು.</p> <p>CO3: ವಿದ್ಯುನ್ಮಾನ ಯುಗದಲ್ಲಿ ಸಾಹಿತ್ಯದಿಂದ ವಿಮುಖರಾಗುತ್ತಿರುವ ಯುವ ಪೀಳಿಗೆಗೆ ಸಾಹಿತ್ಯದಡೆಗೆ ಒಲವು ಮೂಡುವಂತೆ ಮಾಡುವುದು</p> |

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| Semester | III SEMESTER |
| Subject | GENDER EQUITY. |
| Code | BCMGEF231/ BBAGEF231/BCAGEF231/BSCGEF231 |
| Learning Objectives | <p>To enable the students to:</p> <ol style="list-style-type: none"> 1. Understand the Basic concepts of Gender Equity. 2. Generate awareness on Gender Discrimination and Violence. 3. Contribution towards women Empowerment. |
| Learning Outcomes | <p>Upon the completion of this course the students will be able to</p> <p>CO1: Enrich their knowledge on basic Concept of Gender Equity.</p> <p>CO2: Generate awareness on Gender Discrimination and Gender violence.</p> <p>CO3: Acquire knowledge on Constitutional Rights and protective Legislations for women.</p> <p>CO4: Gain knowledge on Measures adopted / Implemented for Gender Empowerment</p> |

FOURTH SEMESTER

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| Semester | IV SEMESTER |
| Subject | COMPUTER GRAPHICS AND ANIMATION |
| Code | BCAC 281 |
| Learning Objectives | To learn about various technologies in computer graphics, animation and virtual reality system |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able to:</p> <p>CO1: Draw primitive graphical shapes using existing built-in functions.</p> <p>CO2: Apply various algorithms to draw lines, Circles and ellipses.</p> <p>CO3: Implement basic transformation such as translation, scaling and rotation using matrices.</p> <p>CO4: Perform Point clipping, line and polygon clipping.</p> <p>CO5: Know applications of Virtual reality system.</p> |

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| Semester | IV SEMESTER |
| Subject | JAVA PROGRAMMING |
| Code | BCAC 282 |
| Learning Objectives | <ol style="list-style-type: none"> 1. To understand pure object-oriented programming paradigm 2. To familiarize with the fundamentals of Java features 3. To introduce console and GUI based applications using Java 4. To know the basic approaches to the design of software applications |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able to:</p> <p>CO1: Know the structure and model of the Java programming language</p> <p>CO2: Use the Java programming language for various programming technologies</p> <p>CO3: Develop software Packages, applets and threads</p> <p>CO4: Create programs using Swings.</p> <p>CO5: Create Java interface with JDBC/ODBC connectivity.</p> |

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| Semester | IV SEMESTER |
| Subject | DATA MINING |
| Code | BCAC 283-E1 |
| Learning Objectives | <ol style="list-style-type: none"> 1. To introduce the basic concepts and techniques of Data Mining. 2. To study the methodology of engineering legacy databases for data warehousing and data mining to derive. 3. To learn Business rules for decision support systems 4. To develop and apply critical thinking, problem-solving, and decision-making skills. |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able to know:</p> <p>CO1: Various Data Mining concepts, Association rules and Clustering techniques.</p> <p>CO2: Web mining Concepts & Decision trees.</p> <p>CO3: Clustering algorithms</p> <p>CO4: How to select and implement data mining techniques suitable for the applications under consideration</p> |

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| Semester | IV SEMESTER |
| Subject | COMPUTER GRAPHICS AND ANIMATION LAB |
| Code | BCAP 286 |
| Learning Objectives | To apply and learn various algorithms in computer graphics |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able to implement Programs:</p> <p>CO1: With built in functions to draw primitive graphics shapes.</p> <p>CO2: To draw lines, circles, ellipses using algorithms.</p> <p>CO3: For clipping operations.</p> <p>CO4: For various transformations.</p> <p>CO5: For any given problem using graphics methods.</p> |

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| Semester | IV SEMESTER |
| Subject | JAVA Lab |
| Code | BCAP 287 |
| Learning Objectives | To learn various concepts in JAVA practically. |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able to:</p> <p>CO1: Create programs using simple OOP concept.</p> <p>CO2: Use Thread applications</p> <p>CO3: Design applets.</p> <p>CO4: Design forms using swings.</p> <p>CO5: Prepare projects using JAVA with database connectivity.</p> |

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| Semester | IV SEMESTER |
| Subject | ELECTIVE -IV: OTHER DOMAIN /DISCIPLINE E-COMMERCE |
| Code | BCAOE 289-E2 |
| Learning Objectives | To learn the concepts and principles of E-commerce, modern technologies used to simplify business and banking processes through e-commerce, provision of E-commerce services. |
| Learning Outcomes | Upon the completion of this course, the students will be aware of: CO1: The principles and practice of Electronic Commerce. CO2: The components, functions and roles of the Electronic Commerce environment. CO3: Security Practices in E-Commerce. CO4: E-Commerce payment systems |

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| Semester | IV SEMESTER |
| Subject | COMPULSORY FOUNDATION COURSE IN ENGLISH |
| Code | BCAENL 281 |
| Learning Objectives | <ol style="list-style-type: none"> 1. To enable the learner to communicate in real-life situations effectively and appropriately 2. To use English effectively throughout the curriculum for study purposes 3. To develop interest in and appreciation of Literature 4. To develop and integrate the use of the four language skills i.e., Reading, Listening, Speaking and Writing |
| Learning Outcomes | Upon the completion of this course, the students will be able to: CO1: Identify the story, characters, plot. CO2: Identify the author's / characters' viewpoint, attitude or opinion. CO3: Enhance oral and written communication skills like accuracy and fluency of expression. CO4: Master the mechanics of writing; the use of correct punctuation marks and capital letters. CO5: Practice writing through assignments that ask them to plan, draft, revise and edit essays overtime. CO6: Gain insights on persuasive techniques used in advertising and apply the same to analyze advertising in a variety of sources viz., print, television, and Web-based advertisement. |

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| Semester | IV SEMESTER |
| Subject | HINDI |
| Code | BCAHDL 281 |
| Learning Objectives | 1. वास्तविकता का उद्देश्य 2. जीविकोपार्जन का उद्देश्य |
| Learning Outcomes | CO1: हिंदी उपन्यास के बारे में जानकारी प्राप्त होगी CO2: प्रयोजनमूलक हिन्दी के अंतर्गत राष्ट्रभाषा, राजभाषा और संपर्क भाषा की जानकारी प्राप्त होगी |

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| Semester | IV SEMESTER |
| Subject | KANNADA |
| Code | BCAKAL 281 |
| Learning Objectives | ಸಾಮಾಜಿಕ ಮಾಧ್ಯಮಗಳ ಬಗ್ಗೆ ಜಾಗೃತಿಯನ್ನು ಮೂಡಿಸುವುದರೊಂದಿಗೆ ಸಾಹಿತ್ಯದ ಪರಿಭಾಷೆಯಲ್ಲಿ ಸಾಹಿತ್ಯದಡೆಗೆ ಒಲವನ್ನು ಮೂಡಿಸುವುದು |
| Learning Outcomes | CO1: ಗಣಕ ಕ್ಷೇತ್ರದಲ್ಲಿ ಕನ್ನಡವನ್ನು ಪರಿಣಾಮಕಾರಿಯಾಗಿ ಬಳಸುವುದಕ್ಕೆ ಹಾಗೂ ತಿಳಿದುಕೊಳ್ಳುವಲ್ಲಿ ವಿದ್ಯಾರ್ಥಿಗಳು ಸಜ್ಜಾಗುವರು. ಸಾಮಾಜಿಕ ಮಾಧ್ಯಮಗಳ ಕುರಿತು ಕನ್ನಡದಲ್ಲೇ ಅರಿತುಕೊಳ್ಳುವ ಪ್ರಯತ್ನ ಮಾಡುವರು. CO2: ಇಂದಿನ ತಂತ್ರಜ್ಞಾನ ಯುಗದಲ್ಲಿ ಅಗತ್ಯವಾದ ಕನ್ನಡವನ್ನು ರೂಪಿಸಿ, ಗಣಕ ಕ್ಷೇತ್ರಕ್ಕೆ ಬೇಕಾದ ತಾಂತ್ರಿಕ ವಿಷಯಗಳನ್ನು, ಪರಿಭಾಷೆಯನ್ನು ಕನ್ನಡದಲ್ಲಿ ತಿಳಿದುಕೊಳ್ಳುವರು. CO3: ವಿದ್ಯುನ್ಮಾನ ಯುಗದಲ್ಲಿ ಸಾಹಿತ್ಯದಿಂದ ವಿಮುಖರಾಗುತ್ತಿರುವ ಯುವ ಪೀಳಿಗೆಗೆ ಸಾಹಿತ್ಯದಡೆಗೆ ಒಲವು ಮೂಡುವಂತೆ ಮಾಡುವುದು. |

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| Semester | IV SEMESTER |
| Subject | ENVIRONMENTAL STUDIES |
| Code | BCMESF281/ BBAESF281/BCAESF281/BCESF281 |
| Learning Objectives | To enable the students to: 1. Understand the Environmental studies. 2. Gain awareness on Environmental pollution. 3. Apply their knowledge in conservation and management of Natural Resources. |
| Learning Outcomes | Upon the completion of this course the students will be able to CO1: Enrich their knowledge on Environment. CO2: Generate Awareness on Environment pollutions. CO3: Provide knowledge on Resource conservation. CO4: Provide knowledge on legislative measures for Environment pollution. |

FIFTH SEMESTER

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| Semester | V SEMESTER |
| Subject | SOFTWARE ENGINEERING |
| Code | BCAC 331 |
| Learning Objectives | <ol style="list-style-type: none"> 1. To prepare students for successful careers in <i>software engineering</i>. 2. To develop skills in software development systematically |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able to:</p> <p>CO1: Understand the various software development process models.</p> <p>CO2: Design DFD</p> <p>CO3: Apply function-oriented design.</p> <p>CO4: Use various testing tools.</p> <p>CO5: Analyze and resolve information technology problems through the application of systematic approaches and diagnostic tools.</p> |

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| Semester | V SEMESTER |
| Subject | COMPUTER & COMMUNICATION NETWORKS |
| Code | BCAC 332 |
| Learning Objectives | <p>To learn about</p> <ol style="list-style-type: none"> 1. Computer networks and Data Communications through Networks. 2. The major concepts involved in wide-area networks (WANs), local area networks (LANs) and Wireless LANs (WLANs). |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able to:</p> <p>CO1: Understand the architectural principles of computer networking.</p> <p>CO2: Compare different approaches to organizing networks.</p> <p>CO3: Explain key networking protocols.</p> <p>CO4: Hierarchical relationships among the protocols in the context of a conceptual model such as the OSI and TCP/IP framework.</p> <p>CO5: Identify core networking and infrastructure components and their roles.</p> |

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| Semester | V SEMESTER |
| Subject | DISTRIBUTED COMPUTING |
| Code | BCAC 333 |
| Learning Objectives | <p>To learn</p> <ol style="list-style-type: none"> 1. To study concurrent, Client Server distributed paradigms 2. To learn Interprocess Communication |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able to:</p> <p>CO1: Understand Concepts of Distributed Systems.</p> <p>CO2: Design and build application programs on distributed systems.</p> <p>CO3: Develop, test and debug RPC based client server programs</p> <p>CO4: Write sample RMI application.</p> <p>CO5: Decide the type of server required for any application.</p> |

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| Semester | V SEMESTER |
| Subject | WEB TECHNOLOGY |
| Code | BCAC 334 |
| Learning Objectives | To learn 1. The tools and technologies necessary for Web application design and development. 2. Client-side scripting like HTML, server-side scripting like s, ASP, PHP and databaseinterfacing. |
| Learning Outcomes | Upon the completion of this course, the students will be able to: CO1: Understand Web Application Terminologies and Internet Tools CO2: Select and apply markup languages for processing, identifying, and presentinginformation in web pages. CO3: Use scripting languages and web services to add interactive components to web pages CO4: Design to be reusable the software components in a variety of different environments. CO5: Design and implement websites with good aesthetic sense of designing. |

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| Semester | V SEMESTER |
| Subject | PYTHON PROGRAMMING |
| Code | BCAC 335 |
| Learning Objectives | 1. To learn basics of Python Programming language with the advanced concepts like OOPS, 2. Exception handling, multi-threading, Networking, Database Connectivity and GraphicalUser Interface. |
| Learning Outcomes | Upon the completion of this course, the students will be able to: CO1: Understand features of Python. CO2: Use the various data types, statements and arrays in program. CO3: Apply the OOP concepts in Python programming. CO4: Design networking and database connectivity. CO5: Skilled at creating, debugging and testing a software application using the Pythonprogramming language |

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| Semester | V SEMESTER |
| Subject | ACCOUNTING& FINANCIAL MANAGEMENT |
| Code | BCAC 336 |
| Learning Objectives | <ol style="list-style-type: none"> 1. To provide Basic knowledge of accounting, competency to enter accounting transactions in the accounting software and generate different accounting reports/documents. 2. Abilities to make cost analysis reports, profit & loss accounts, balance sheets, and cash flow statements etc. 3. Skills in maintaining accounting records, provides in-depth exposure to accounts receivable/ accounts payable, payroll and inventory modules. |
| Learning Outcomes | <p>CO1: At the end of the semester the students will be able to</p> <p>CO2: Apply skills in Computerized Accounting for maintaining accounting records.</p> <p>CO3: Make management decisions, and processing common business applications.</p> |

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| Semester | V SEMESTER |
| Subject | WEB APPLICATION LAB |
| Code | BCAP 339 |
| Learning Objectives | <p>To become practically strong in</p> <ol style="list-style-type: none"> 1. The tools and technologies necessary for Web application design and development. 2. Client-side scripting like HTML, server-side scripting like s, ASP, PHP and databaseinterfacing. |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able to:</p> <p>CO1: Understand Web Application Terminologies and Internet Tools</p> <p>CO2: Design web pages.</p> <p>CO3: Use scripting languages and web services to add interactive components to web pages</p> <p>CO4: Design to be reusable the software components in a variety of different environments.</p> <p>CO5: Design and implement websites with good aesthetic sense of designing</p> |

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| Semester | V SEMESTER |
| Subject | ACCOUNTING& FINANCIAL MANAGEMENT LAB |
| Code | BCAP 341 |
| Learning Objectives | <ol style="list-style-type: none"> 1. To impart knowledge regarding concepts of Financial Accounting. 2. To make students capable to create company, enter accounting voucher entries including advance voucher entries, reconcile bank statement, do accrual adjustments, and also print financial statements, etc. 3. To make students ready with required skill for employability in the job market |
| Learning Outcomes | <p>After successfully qualifying practical examination,</p> <p>CO1: Students will be able to work with accounting software Tally ERP.9</p> <p>CO2: Student by their own will create company, enter accounting voucher entries including advance voucher entries, reconcile bank statements, do accrual adjustments, and also print financial statements, etc. in Tally ERP.9 software.</p> <p>CO3: Students will possess required skill efficiently handle accounting transactions through Tally.</p> |

SIXTH SEMESTER

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| Semester | VI SEMESTER |
| Subject | E-COMMERCE |
| Code | BCAC 381 |
| Learning Objectives | <p>To learn</p> <ol style="list-style-type: none"> 1. Concepts and principles E-commerce. 2. Modern technologies used to simplify business and banking processes through e-commerce. 3. Provision of E-commerce services, infrastructure, frameworks of web based and 4. mobile systems for E-Commerce applications. |
| Learning Outcomes | <p>Upon the completion of this course, the students will be able to:</p> <p>CO1: Understand the principles and practice of Electronic Commerce</p> <p>CO2: Realize the components, functions and roles of the Electronic Commerce environment</p> <p>CO3: Know about the E-Commerce payment systems.</p> <p>CO4: Practice the E-Commerce applications with secured transactions</p> |

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| Semester | VI SEMESTER |
| Subject | NETWORK SECURITY AND MANAGEMENT |
| Code | BCAC 382 |
| Learning Objectives | To provide in-depth knowledge of network Security, Database Security, information Security and Security laws. |
| Learning Outcomes | Upon the completion of this course, the students will be able to: CO1: Understand Various factors driving the need for network, Database and information security. CO2: Realize the Physical points of vulnerability in a network. CO3: Know the Basic cryptography Concepts. CO4: Gain the knowledge of Network Security Management. CO5: Use secured Internet banking system. |

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| Semester | VI SEMESTER |
| Subject | SOFTWARE TESTING |
| Code | BCAC 383 |
| Learning Objectives | To understand the necessity of software testing and familiarize with different tools available for software testing. |
| Learning Outcomes | Upon the completion of this course, the students will be able to: CO1: Understand the importance of software testing. CO2: Know different testing techniques and use of various test tools. CO3: Create test strategies and plans, design test cases, prioritize and execute them. CO4: Contribute to efficient delivery of software solutions CO5: Implement improvements in the software development processes. |

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| Semester | VI SEMESTER |
| Subject | PROGRAMMING FOR ANALYTICS |
| Code | BCAC 384-E1 |
| Learning Objectives | To study various programming languages in the field of Analytics like SQL, SAS, and form foundation for further analysis of Datasets. |
| Learning Outcomes | Upon the completion of this course, the students will be able to: CO1: Obtain, clean/process and transform data. CO2: Analyze and interpret data using an ethically responsible approach. CO3: Use appropriate models of analysis, assess the quality of input, derive insight from results. CO4: Investigate potential issues. CO5: Formulate and use appropriate models of data analysis to solve hidden solutions to business related Challenges |

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| Semester | VI SEMESTER |
| Subject | PROJECT WORK |
| Code | BCAC387 |
| Learning Objectives | To involve the students in all the stages of the software development life cycle (SDLC) like requirements analysis, systems design, software development/ coding, testing and documentation, with an overall emphasis on the development of reliable software systems |
| Learning Outcomes | Upon the completion of this course, the students will be able to: CO1: Plan for the project. CO2: Prepare System design, Database design, Detailed design CO3: Implement the project by coding, testing. CO4: Prepare the mandatory documents. CO5: Demonstrate their project effectively |